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Contents

Ashtanga Primary Series

Introduction and Philosophy

Ashtanga yoga is a system of yoga recorded by the sage Vamana Rishi in the Yoga Korunta, an ancient manuscript "said to contain lists of many different groupings of asanas, as well as highly original teachings on vinyasa, drishti, bandhas, mudras, and philosophy". The text of the Yoga Korunta "was

imparted to Sri T. Krishnamacharya in the early 1900's by his Guru Rama Mohan Brahmachari, and was later passed down to Pattabhi Jois during the duration of his studies with Krishnamacharya, beginning in 1927". Since 1948, Pattabhi Jois had been teaching Ashtanga yoga from his yoga shala, the Ashtanga Yoga Research Institute, according to the sacred tradition of Guru Parampara until the time of his death.

Ashtanga yoga literally means "eight-limbed yoga," as outlined by the sage Patanjali in the Yoga Sutras. According to Patanjali, the path of internal purification for revealing the Universal Self consists of the following eight spiritual practices:

1. **Yama [moral codes]**
2. **Niyama [self-purification and study]**
3. **Asana [posture]**
4. **Pranayama [breath control]**
5. **Pratyahara [sense control]**
6. **Dharana [concentration]**
7. **Dhyana [meditation]**
8. **Samadhi [absorption into the Universal]**

The first four limbs—yama, niyama, asana, pranayama—are considered external cleansing practices. According to Pattabhi Jois, defects in the external practices are correctable. However, defects in the internal cleansing practices—pratyahara, dharana, dhyana—are not correctable and can be dangerous to the mind unless the correct Ashtanga yoga method is followed. For this reason, Pattabhi Jois emphasizes that the "Ashtanga Yoga method is Patanjali Yoga".

The definition of yoga is "the controlling of the mind" [citta vrtti nirodhah]. The first two steps toward controlling the mind are the perfection of yama and niyama. However, it is "not possible to practice the limbs and sub-limbs of yama and niyama when the body and sense organs are weak and haunted by obstacles". A person must first take up daily asana practice to make the body strong and healthy. With the body and sense organs thus stabilized, the mind can be steady and controlled. With mind control, one is able to pursue and grasp these first two limbs.

To perform asana correctly in Ashtanga yoga, one must incorporate the use of vinyasa and tristhana. "Vinyasa means breathing and movement system. For each movement, there is one breath. For example, in Surya Namskar there are nine vinyasas. The first vinyasa is inhaling while raising your arms over your head, and putting your hands together; the second is exhaling while bending forward, placing your hands next to your feet, etc. In this way all asanas are assigned a certain number of vinyasas".

"The purpose of vinyasa is for internal cleansing". Synchronizing breathing and movement in the asanas heats the blood, cleaning and thinning it so that it may circulate more freely. Improved blood circulation relieves joint pain and removes toxins and disease from the internal organs. The sweat generated from the heat of vinyasa then carries the impurities out of the body. Through the use of vinyasa, the body becomes healthy, light and strong.

Tristhana refers to the union of "three places of attention or action: posture, breathing system and looking place. These three are very important for yoga practice, and cover three levels of purification: the body, nervous system and mind. They are always performed in conjunction with each other".

Posture: "The method for purifying and strengthening the body is called asana". In Ashtanga yoga, asana is grouped into six series. "The Primary Series [Yoga Chikitsa] detoxifies and aligns the body. The Intermediate Series [Nadi Shodhana] purifies the nervous system by opening and clearing the energy channels. The Advanced Series A, B, C, and D [Sthira Bhaga] integrate the strength and grace of the practice, requiring higher levels of flexibility and humility. Each level is to be fully developed before proceeding to the next, and the sequential order of asanas is to be meticulously followed. Each posture is a preparation for the next, developing the strength and balance required to move further" (Pace). Without an earnest effort and reverence towards the practice of yama and niyama, however, the practice of asana is of little benefit.

Breathing: The breathing technique performed with vinyasa is called ujjayi [victorious breath], which consists of puraka [inhalation] and rechaka [exhalation]. "Both the inhale and exhale should be steady and even, the length of the inhale should be the same length as the exhale". Over time, the length and intensity of the inhalation and exhalation should increase, such that the increased stretching of the breath initiates the increased stretching of the body. Long, even breathing also increases the internal fire and strengthens and purifies the nervous system.

Bandhas are essential components of the ujjayi breathing technique. Bandha means "lock" or "seal". The purpose of bandha is to unlock pranic energy and direct it into the 72,000 nadi [energy channels] of the subtle body. Mula bandha is the anal lock, and uddiyana bandha is the lower abdominal lock. Both bandhas "seal in energy, give lightness, strength and health to the body, and help to build a strong internal fire". Mula bandha operates at the root of the body to seal in prana internally for uddiyana bandha to direct the prana upwards through the nadis. Jalandhara bandha is the "throat lock", which "occurs spontaneously in a subtle form in many asanas due to the dristi ("gaze point"), or head position". "This lock prevents pranic energy [from] escaping and stops any build-up of pressure in the head when holding the breath". Without bandha control, "breathing will not be correct, and the asanas will give no benefit".

Looking Place: Dristhi is the gazing point on which one focuses while performing the asana. "There are nine dristhis: the nose, between the eyebrows, navel, thumb, hands, feet, up, right side and left side. Dristhi purifies and stabilizes the functioning of the mind". In the practice of asana, when the mind focuses purely on inhalation, exhalation, and the drishti, the resulting deep state of concentration paves the way for the practices of dharana and dhyana, the six and seventh limbs of Ashtanga yoga.

Instruction in pranayama can begin after one has learned the asanas well and can practice them with ease. "Pranayama means taking in the subtle power of the vital wind through rechaka [exhalation], puraka [inhalation], and kumbhaka [breath retention]. Only these kriyas, practiced in conjunction with the three bandhas [muscle contractions, or locks] and in accordance with the rules, can be called pranayama". The three bandhas are "mula bandha, uddiyana bandha, and jalandhara bandha, and they

should be performed while practicing asana and the like". "When mula bandha is perfect, mind control is automatic". "In this way did Patanjali start Yoga. By using mulabandha and by controlling the mind, he gradually gained knowledge of Yoga".

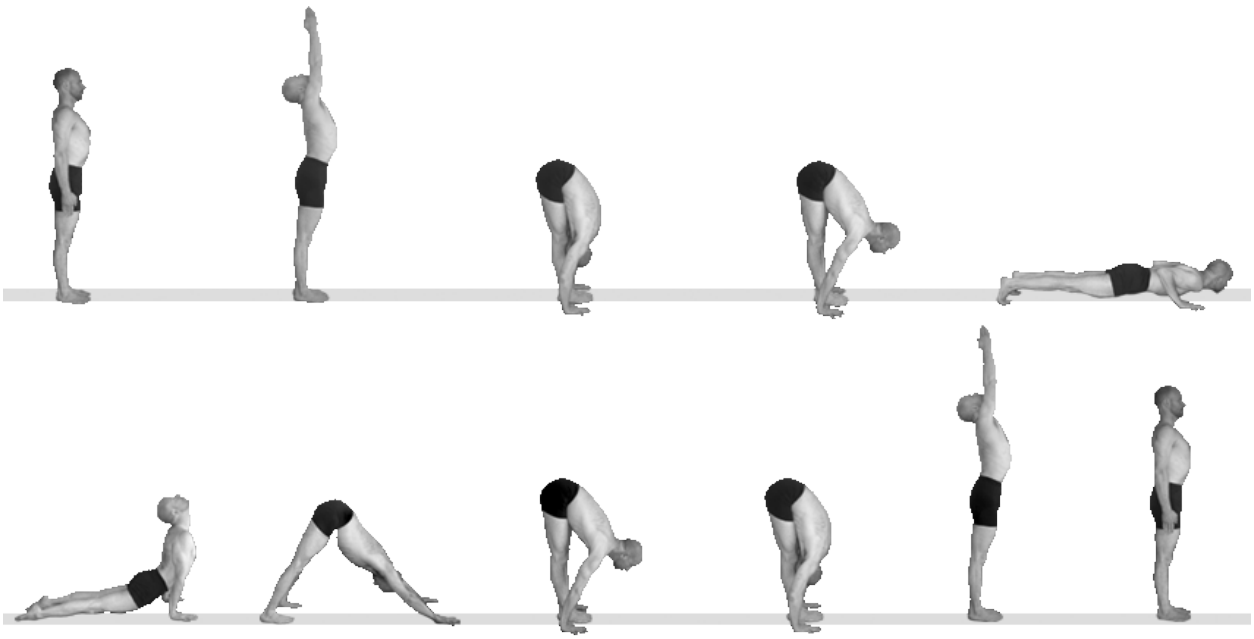
Practicing asana for many years with correct vinyasa and tristhana gives the student the clarity of mind, steadiness of body, and purification of the nervous system to begin the prescribed pranayama practice. "Through the practice of pranayama, the mind becomes arrested in a single direction and follows the movement of the breath". Pranayama forms the foundation for the internal cleansing practices of Ashtanga yoga.

The four internal cleansing practices—pratyahara, dharana, dhyana, and samadhi—bring the mind under control. When purification is complete and mind control occurs, the Six Poisons surrounding the spiritual heart [kama (desire), krodha (anger), moha (delusion), lobha (greed), matsarya (sloth), and mada (envy)]—"will, one by one, go completely", revealing the Universal Self. In this way, the correct, diligent practice of Ashtanga Yoga under the direction of a Guru "with a subdued mind unshackled from the external and internal sense organs" eventually leads one to the full realization of Patanjali's eight-limbed yoga.

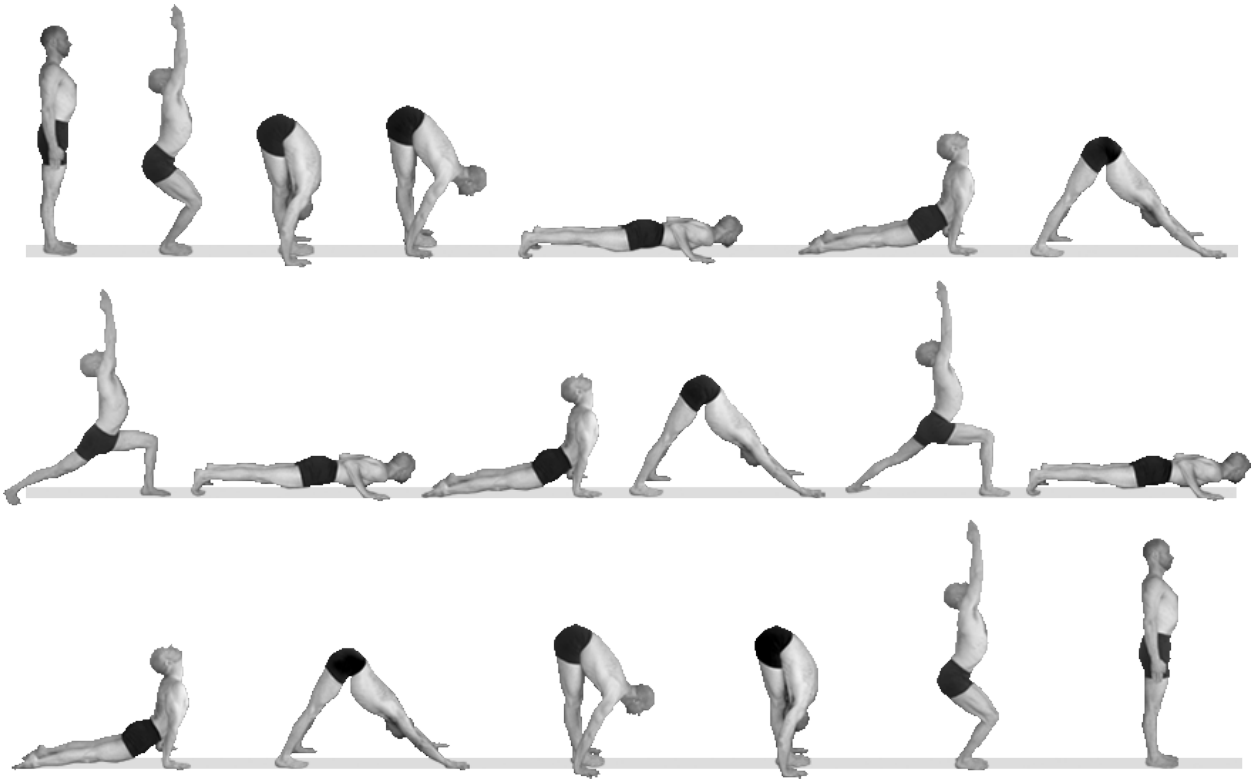
Yoga Asanas

The asanas that follow the Surya Namaskara should be practiced in the manner described below.

Ashtanga Sun Salutation A (11 Steps)



Ashtanga Sun Salutation B (19 Steps)



1. Padangushtasana

Padangushtasana has three vinyasas, of which the 2nd is the state of the asana.

METHOD

First, stand up straight, inhaling through the nostrils deeply, jump the legs apart as much as half a foot, slowly let the breath out, reach down and take hold of the big toes, lift the head and chest up completely without bending the knees, and stay in position while inhaling; this is the 1st vinyasa. Then, letting the breath out, take in the lower abdomen, place the head in the region between the two knees,

straighten the knees, and stay in position, doing puraka and rechaka as much as possible; this is the 2nd vinyasa.

Next, inhaling, slowly lift the head, remaining in position with the fingers holding the big toes; this is the 3rd vinyasa. Then exhale and return to Samasthiti. While in the state of this asana, the lower abdomen should be drawn in and held tightly, and rechaka and puraka should be done slowly and as much as possible. This is the way to do Padangushtasana.

BENEFITS

Padangushtasana dissolves the fat of the lower abdomen, and purifies both the kanda, or egg-shaped nerve plexus in the anal region, and the rectum.

2. Padahastasana

Padahastasana has three vinyasas. The 2nd vinyasa is the state of the asana.

METHOD

To begin, stand with the legs as much as half a foot apart, as in Padangushthasana, and doing puraka and then rechaka, place palms under the feet and, doing puraka, lift the head up and stay in position; this is the 1st vinyasa. Then, doing rechaka, place the head in the region between the knees, keeping knees straight, and hold position, doing rechaka and puraka fully as much as possible; this is the 2nd

vinyasa. Then, taking the breath in, lift only the head; this is the 3rd vinyasa. Then Samasthiti, as in the earlier asana. In the state of this asana, the lower abdomen should be drawn in tightly, and rechaka and puraka done as much as possible.

BENEFITS

Padahastasana purifies the anal canal, kidneys, and lower abdomen.

3. Utthita Trikonasana

Utthita Trikonasana has five vinyasas, of which the 2nd and 4th are the states of the asana. Rechaka and puraka should be performed as above and, as with the Surya Namaskara, rechaka occurs in the evennumbered vinyasas and puraka in the odd. Aspirants should note the correct movements of both, and perform them properly.

METHOD

First, beginning with puraka, jump the legs open to the right, three feet apart, stretch the arms out wide on either side of the torso at chest level, and hold; this is the 1st vinyasa. Then, turn the right foot to the right and exhaling, reach down and take hold of the big toe of the right foot with the right hand, lift up the other arm, fix the gaze on its fingertips, and do puraka and rechaka slowly and as much as possible; this is the 2nd vinyasa; for this vinyasa, both knees must be kept straight. Then, doing puraka, return to the position of the 1st vinyasa, and hold; this is the 3rd vinyasa. Then, turn the left foot to the left, and doing rechaka, reach down and take hold of the big toe, gaze at the tip of the raised hand, and do puraka and rechaka as much as possible; this is the 4th vinyasa. Then, doing puraka, return to the position of the 1st vinyasa; this is the 5th vinyasa. Then, return to Samasthiti.

BENEFITS

It gives Strength to your legs, feet and ankles. Stretches hips, groins, hamstrings, calves and spine. Opens chest and shoulders. Strengthens back, neck and abdominals. Stimulates abdominal organs, aiding in digestion. Best therapy for stress, anxiety, infertility, flat feet, neck pain, osteoporosis, sciatica and symptoms of menopause. Give reliefs in backache, especially during pregnancy.

3.1. Parivratta Utthita Trikonasana

METHOD

Stand in Tadasana with an exhalation. Step your feet 3 to 4 feet apart. Raise your arms parallel to the floor and reach them actively out to the sides, shoulder blades wide and palms down. Now turn your left feet in 45 to 60 degree to the right and your right feet out to the right 90 degrees. Align your right heel with the left heel, firm your thighs and turn your right thigh outward, from which the center of the right kneecap is in line with the center of the right ankle. With an exhalation, you have to turn your torso to the right and keep your hip points square as much as you can with the front edge of your mat. As you bring the left hip around to the right, resist your head to the left thigh bone back and firmly ground the left heel. Do another exhalation, you have to turn your torso to the right and lean forward over the front leg.Then reach your left hand down and allow the left hip to drop slightly toward the floor. While doing this you may feel the right hip slip out to the side and lift up toward the shoulder and the torso hunch over the front leg. Press the outer right thigh actively to the left and release the right hip away from the right shoulder. Keep your head in a neutral position, and looking straight forward. Hold this position for 30 seconds to one minute. Exhale and release the twist slowly, bring your torso back to upright with an inhalation. Repeat for the same length of time with your legs.

BENEFITS

It Strengthens and stretches the legs. Stretches the hips and spine. Opens the chest to improve breathing. Relieves mild back pain. It stimulates the abdominal organs. It also Improves sense of balance.

4. Utthita Parshvakonasana

This asana has five vinyasas, of which the 2nd and 4th constitute the states of the asana. Rechaka and puraka should follow the method described for earlier asanas.

METHOD

For this asana, jump the legs open to the right, doing puraka, and stand with the legs as much as five feet apart, as in Trikonasana, stretching out the arms tightly at the level of the chest, and swelling the chest. Then, doing rechaka , turn the right foot out, bend the knee completely, place the right hand by the side of the right foot, stretch the left arm straight out over the ear, and gaze at the fingertips; this is the 2nd vinyasa, which is the state of the asana and during which puraka and rechaka should be done as much as possible. Then, doing puraka, return to the position of the 1st vinyasa; this is the 3rd vinyasa. Then, as with the right leg and doing rechaka, repeat above for the left leg; this is the 4th vinyasa. Next, doing puraka, return to the position of the 1st vinyasa; this is the 5th vinyasa. Then come to Samasthiti. In the 2nd and 4th vinyasas, which are the states of this asana, the body should be held tightly, and rechaka and puraka done slowly and as much as possible. Indeed, in whatever asana, aspirants should not forget to perform rechaka and puraka slowly and as much as possible while in the asana's state.

BENEFITS

Utthita Parshvakonasana purifies the ribs and lower abdomen, dissolves the bad fat at the waist, and softens the limbs so that subsequent asanas can be more easily practiced.

5. Prasarita Padottanasana (A)

This four-part asana has five vinyasas, of which the 3rd is the state of the asana. In the 2nd vinyasa, aspirants should note that both rechaka and puraka are to be performed.

METHOD

Jump to the right, doing puraka and spreading the legs as much as five feet apart, as in Utthita Parshvakonasana, and place the hands on the waist; this is the 1st vinyasa. Then, doing rechaka, press the hands to the floor with the fingertips in line with the big toes, keeping the head lifted and doing puraka slowly; this is the 2nd vinyasa. Next, doing rechaka, place the head on the floor between the hands, keeping the legs straight and tight, and hold position with waist lifted, doing puraka and rechaka as much as possible; this is the 3rd vinyasa, during which the stomach should be drawn in properly, using only the uddiyana bandha, or stomach lock, and by slightly loosening the mula bandha, or anal lock. Then, doing puraka, lift and hold the head up completely, and do rechaka; this is the 4th vinyasa. Next, doing puraka, lift the hands and place them on the waist, and return to the position of the 1st vinyasa; this is the 5th vinyasa. Then follows Samasthiti.

5.1. Prasarita Padottanasana (B)

This is the second part of Prasarita Padottanasana. Rechaka and puraka should be performed as above.

METHOD

Doing puraka, stand, as in Prasarita Padottanasana (A), stretch arms out to the sides at chest level and straighten them, as in Trikonasana, and hold position; this is the 1st vinyasa. Then, doing rechaka, place the hands on the waist; this is the 2nd vinyasa. Next, after doing puraka and then rechaka, place the head slowly on the floor, using the strength of the waist and legs, and do puraka and rechaka as much as possible; this is the 3rd vinyasa. Then, without placing the hands on the floor and doing puraka, lift the head up, using only the strength of the waist and legs, and stand up straight; this is the 4th vinyasa. Next, after doing rechaka and then puraka, bring arms out wide at the level of the chest, as described in the 1st vinyasa, and hold position; this is the 5th vinyasa. (Aspirants should note that in each part of Prasarita Padottanasana, both rechaka and puraka occur in the same vinyasas.)

5.2. Prasarita Padottanasana (C)

METHOD

Place hands on waist and stand, doing puraka, as in (A) and (B) above; this is the 1st vinyasa. Then, doing rechaka, lock the fingers behind the back, swell the chest, and stand; this is the 2nd vinyasa. Then, doing puraka and then rechaka, slowly place the head on the floor, straightening and tightening both the arms and legs, and do puraka and rechaka as much as possible; this is the 3rd vinyasa. Then, doing puraka and without unlocking the hands, lift the head up, using the strength of the waist only; this is the 4th vinyasa. Then, after doing rechaka and then puraka, unlock the hands from behind the back and place them on the waist; this is the 5th vinyasa. Then come into Samasthiti.

5.3. Prasarita Padottanasana (D)

METHOD

Stand with the legs apart, as in Prasarita Padottanasana (A), and doing puraka , place the hands on the waist; this is the 1st vinyasa. Then, while doing rechaka, take hold of the big toes and lift the head, keeping the arms and spine straight; this is the 2nd vinyasa. Then, doing puraka and again rechaka, place the center of the head on the floor in line with the feet, keeping the legs straight and the lower abdomen pulled in, and breathe fully and deeply as much as possible; this is the 3rd vinyasa. Next, doing puraka, lift the head up completely and hold, doing rechaka; this is the 4th vinyasa. Then, doing puraka, lift the hands, place them on the waist, and return to the position of the 1st vinyasa; this is the 5th vinyasa. Then follows Samasthiti.

BENEFITS

Great attention should be paid to the stomach and the anal channel while practicing the four parts of Prasarita Padottanasana. It is best to learn the proper method from a Guru. If this is done, the anal canal will be purified, the bad fat in the lower abdomen will dissolve, the waist will become thin and strong, and the body will become light and beautiful. This asana also cures constipation, and purifies the top part of the spinal column and the waist.

6. Parshvottanasana

Parshvottanasana has only five vinyasas, the 2nd and 4th of which are the states of the asana. Rechaka and puraka are as in Trikonasana.

METHOD

Jump to the right, standing with the legs three feet apart, as described in Trikonasana, bring hands together behind the back in a prayer position and, doing puraka, turn the right foot and waist to the right, and lift the chest; this is the 1st vinyasa. Then, doing rechaka slowly, touch the nose to the knee without bending the knees, and hold position, doing puraka and rechaka as much as possible; this is the 2nd vinyasa. Then, doing puraka, lift the head up and turn to face the left, following the method for the 1st vinyasa; this is the 3rd vinyasa. Then, doing rechaka, touch the knee with the nose and hold, while doing puraka and rechaka as much as possible; this is the 4th vinyasa. Then, inhale, lift the head and chest, using the strength of the waist, and stand up straight; this is the 5th vinyasa. Then, Samasthiti.

BENEFITS

Like Prasarita Padottanasana, Parshvottanasana eliminates the bad fat at the waist, which makes the lower abdomen thin, the waist strong, and the body light.

IN SHORT, ALL THE ASANAS DESCRIBED ABOVE LOOSEN THE LIMBS OF THE BODY, which aids movement and renders the practice of subsequent asanas easier. They can be done by men and women of all ages. For people suffering from rheumatic or joint pain, the first and second Surya Namaskara and first six asanas are especially important. Done properly with rechaka and puraka, they eliminate the pain that

occurs in the joints, and help the body to become light and healthy. It is very important, however, that the particulars of the vinyasas above be kept in mind during practice by those who are weak or ill. As these are very difficult to convey to aspirants, however much the correct method for doing the asanas is described, it is better that they learn them from a Guru first, and then practice them.

7. Utthita Hasta Padangushtasana

There are fourteen vinyasas in this asana. The 2nd, 4th, 7th, 9th, 11th, and 14th vinyasas are the states of the asana.

METHOD

First, join the legs together, hold the arms by the sides, and stand erect. Then, doing puraka, place the left hand on the waist, straighten the right arm, raise the right leg, catch hold of the big toe with the right hand, and straighten the knees, chest, and waist; this is the 1st vinyasa. Holding this posture and doing rechaka, touch the nose to the knee, which is lifted, and hold, doing puraka and rechaka as much as possible; this is the 2nd vinyasa. Then, doing puraka slowly, lift the head, straighten the chest and waist, and stand as shown in the 1st vinyasa; this is the 3rd vinyasa. Next, doing rechaka, bring the right leg out to the right, hold the arm, leg, waist, and chest straight, and look to the left, breathing fully and deeply as much as possible; this the 4th vinyasa. Then, doing puraka, bring the leg back to the center, as

in the 1st vinyasa; this is the 5th vinyasa. Next, doing rechaka and keeping the leg lifted, touch the nose to the right knee; this is the 6th vinyasa. Then, doing puraka, lift the head, straighten the chest and waist, and stand straight, placing the hands on the waist and keeping the raised right leg extended straight, while breathing fully and deeply as much as possible; this is the 7th vinyasa. Then, doing rechaka, bring the right leg down. Repeat the above for the left leg.

BENEFITS

Utthita Hasta Padangushtasana loosens the hip joints, destroys defects of the testicles and male organ of generation, and purifies and strengthens the vertebral column, waist, hips, and lower abdomen. It also eliminates constipation.

8. Ardha Baddha Padmottanasana

This asana has nine vinyasas, the 1st, 2nd, 6th, and 7th of which are the states of the asana. A sadhaka, or spiritual aspirant, should practice it under the careful guidance of a Guru.

METHOD

First, stand erect. Then, doing puraka, place the right foot on the left thigh, pressing the heel into the lower abdomen, circle the right arm around the back, grasp the right big toe with the right hand, and place the left hand on the waist; this is the 1st vinyasa. Next, after doing rechaka slowly, bend at the waist, press the left hand to the floor by the side of the left foot, straighten the knee, and touch the knee with nose, doing puraka and rechaka slowly, as much as possible; this is the 2nd vinyasa. Then, doing puraka, lift the head only; this is the 3rd vinyasa. Next, doing rechaka and then puraka, stand up straight again, place left hand on waist; this the 4th vinyasa. Then, doing rechaka, release the right leg, which is in the Padmasana form, and straighten it; this is the 5th vinyasa. Next, place the left foot on the right thigh, bring the left arm around the back, take hold of the big toe of the left leg with the left hand, as outlined for the right, place right hand on waist, and stand, doing puraka; this is the 6th vinyasa. Then, as for the 2nd vinyasa and doing rechaka, bend forward, place the right hand on the floor by the right leg, which is straight, and touch the knee with the nose, doing puraka and rechaka as much as possible; this is the 7th vinyasa. Then, doing puraka, lift the head only; this is the 8th vinyasa. Next, doing rechaka and then puraka, place the right hand on the waist and stand up straight; this is the 9th vinyasa.

(Aspirants should note that asanas such as this one which involve both legs are to be performed with the left leg as with the right.)

BENEFITS

The rectum, esophagus, and liver are purified by this asana. It also prevents gas from occurring in the stomach, prevents diarrhea, and quells the gas that arises from inappropriate food. Should gas occur, it wards it off. Ardha Baddha Padmottanasana can be practiced by anyone, including women of all ages, except those whose pregnancies have crossed into the fourth month.

THERE WILL BE DIFFERENCES IN THE STEADINESS OF ASPIRANTS' RECHAKA and puraka while practicing the asanas described above. If they concentrate their minds on their breathing only, the state of an asana will be spoiled. If, on the other hand, they concentrate only on an asana's state, their rechaka and puraka will be spoiled. Therefore, it must again be stressed emphatically that these asanas be learned under the guidance of an able Guru.

9. Utkatasana

There are thirteen vinyasas in Utkatasana; the 7th vinyasa is its state. The vinyasa method described for the first Surya Namaskara is important to know for this asana.

METHOD

First, begin with the initial six vinyasas of the first Surya Namaskara. After the 6th vinyasa and doing puraka, jump into the 1st vinyasa of the second Surya Namaskara, and perform rechaka and puraka as much as possible; this is the 7th vinyasa. (Rechaka and puraka for the first six vinyasas must be performed in the same manner as in the first Surya Namaskara.) Then, doing rechaka and puraka, press the hands to the floor by the sides of the feet, put the whole weight of the body on the two hands, and lift the body up off the floor; this is the 8th vinyasa. Then, doing rechaka, throw the body back with the force of the arms, and hold the position, as in the 4th vinyasa of the first Surya Namaskara; this is the 9th vinyasa. Then, doing puraka, do the 5th vinyasa of the Surya Namaskara; this is the 10th vinyasa. Next, doing rechaka, do the 6th vinyasa of the Surya Namaskara; this is the 11th vinyasa. Then, doing puraka, do the 3rd vinyasa of the Surya Namaskara; this is the 12th vinyasa. Then, do the 2nd vinyasa of the Surya Namaskara; this is the 13th vinyasa. Then, Samasthiti.

BENEFITS

Utkatasana increases the strength of the waist, which becomes slender, and makes the body light. It also prevents pain associated with the vertebral column.

THE VINYASA METHODS FOR THE FIRST NINE ASANAS HAVE NOW BEEN described. The vinyasas of the asanas that follow begin as they do for the first six vinyasas of the first Surya Namaskara. Then, from the 7th vinyasa on, the vinyasas, as well as rechaka and puraka, prescribed for respective asanas differ. I will try to describe the differences as much as possible as they occur. Again, no asana should be performed without following the proper method of vinyasa. If this is ignored, the organs of the body may not develop, fat may not be reduced, and the body could grow ill. In addition, some organs may strengthen, while others become weak, or an organ that was meant to be strengthened may weaken instead. In addition, if there is no steadiness in the movements of rechaka and puraka, then the balance of the heart could be upset, which could weaken it. When this occurs, the nadis become spoiled, and when they spoil, all parts of the body are weakened. Therefore, asanas and the like (puraka, rechaka, etc.) should be practiced following the methods of vinyasa, which is best learned from a Guru experienced in yoga shastra. I consider it my earnest duty to caution the reader and aspirant not to try to learn these methods from books, reflections [photos], or pseudo-yogis. Hereafter, vinyasa methods are not dealt with deeply. Instead, only the state of an asana, vinyasa, and their benefits are described. However, should something special come up, I will describe it.

10. Virabhadrasana

There are sixteen vinyasas to this asana, of which the 7th, 8th, 9th, and 10th are the states of the asana. When in the states of Utkatasana and Virabhadrasana, there is no need to do rechaka and puraka more than five times. However, aspirants should not forget to do rechaka and puraka while performing the vinyasas. In addition, while in the asana's state, it is always important that the body be held firmly and steadily.

METHOD

Begin this asana in the same way as the first Surya Namaskara and continue through to the end of the 6th vinyasa. Next, stand as in the 7th vinyasa of the second Surya Namaskara, and do rechaka and puraka five times; this is the 7th vinyasa. Then, doing rechaka, turn to the left, bend the left knee, keeping the arms raised over the head, with the palms together, the chest lifted up, and do puraka and rechaka five times; this is the 8th vinyasa. Then, keeping the legs in the same position and doing puraka, bring arms down to shoulder level, and stand gazing at the fingertips of the left hand, keeping the arms stretched out straight and tight; this is the 9th vinyasa. Then, doing rechaka and without bending the arms, turn to the right, bend the right knee, and stand gazing at the tips of the right hand with concentration; this is the 10th vinyasa. Next, place the hands on the floor on either side of the right foot and, without allowing the legs to touch the floor, lift both the left leg and bent right leg completely off the floor with only the strength of the hands; this is the 11th vinyasa. Then, the 12th, 13th, 14th, 15th, and 16th vinyasas should be performed in the same manner as the 4th, 5th, 6th, 3rd, and 2nd vinyasas of the first Surya Namaskara. Again, it is best to learn the vinyasas of all the asanas, as well as their states and the series of rechaka and puraka, under the guidance of a Guru, as these are very difficult to relate in the written descriptions given here.

BENEFITS

By means of Virabhadrasana, all the joints of the body, as well as the lower abdomen, spinal column, and organ of generation, are purified. In addition, pain associated with the knees, as well as the pain from standing or sitting all day while working, is eliminated.

11. Paschimattanasana

There are sixteen vinyasas to this asana.

METHOD

To begin, follow the first Surya Namaskara through the 6th vinyasa. Then, doing puraka and with only the strength of the arms, jump the legs between the hands without allowing them to touch the floor, and stretch out the legs. Then press the hands to the floor on either side of the hips, straighten the chest and waist, lower the head a little, draw the anus up tightly, lift the lower abdomen and hold firmly, and sit erect, slowly doing rechaka and puraka as much as possible; this constitutes the 7th vinyasa. Next, doing rechaka, grasp and hold the upper parts of the feet; this is the 8th vinyasa (as your practice becomes firm, you should be able to lock your hands behind your feet). Then, doing puraka slowly, then rechaka, straighten both legs, and place the head between the knees; this is the 9th vinyasa and the state of the asana. While in the state, do puraka and rechaka slowly and deeply, as much as possible. Then, slowly doing puraka, lift only the head; this is the 10th vinyasa. Next, doing rechaka and then puraka, let go of the feet, press the hands to the floor, bend the legs, and lift the entire body up off the floor merely with the strength of the arms; this is the 11th vinyasa. The remaining vinyasas are the same as those for the Surya Namaskara.

There are three types of Paschimattanasana:

1. holding the big toes and touching the nose to the knees;
2. holding on to either side of the feet and touching the nose to the knees;
3. locking the hand and wrist beyond the feet, and touching the chin to the knee. All three types should be practiced, as each is useful.

BENEFITS

The practice of this asana helps the stomach to become slender by dissolving its fat. It also increases jathara agni [the fire of hunger], helps food to digest well, and strengthens the organs of the digestive

systems (jir-nanga kosha). In addition, it cures weakness in the hands and legs resulting from a loss of appetite and low digestive fire, as well as indolence and giddiness stemming from an aberration in the liver, and gas problems in the stomach.

It is worth noting that, for this asana, one has to retract, or squeeze, and hold the anus tightly, as well as squeeze the lower abdomen and hold it in, and concentrate on the nadis related to the kanda, or eggshaped nerve plexus in the anal region. As there is no place for the apana vayu [downward-flowing prana, or energy], which circulates in the anus, to go, it moves upward and becomes one with prana vayu [upward-moving prana]. When this occurs, an aspirant has nothing to fear from old age and death, as Svatmarama Yogendra, the author of Gheranda Samhita, and the sage Vamana both inform us from their own experience: Iti Paschimattanam asanagyam Pavanam paschimavahinam karoti Udayam jatharanalasya kuryadudare karshyamarogatam cha pumsam.

[Principle among asanas, Paschimattanasana causes vital energy to be carried up the spine. As well, it should lead to the rising of the digestive fire, slenderness in the abdomen, and freedom from sickness for all.]

—Hatha Yoga Pradipika i : 29

12. Purvatanasana

Purvatanasana represents Paschimattanasana's opposite. It has fifteen vinyasas, of which the 8th is the state of the asana.

METHOD

To begin, follow the method for Paschimattanasana until the 7th vinyasa. Next, place the hands on the floor at a distance of twelve inches behind the waist, lift the legs and torso entirely off the floor doing puraka, press the soles of the feet firmly on the floor, lower the head back, making the body firm, and hold, while slowly performing rechaka and puraka; this is the 8th vinyasa. Then, doing rechaka slowly, return to the state of the 7th vinyasa and sit; this is the 9th vinyasa. The vinyasas that complete this asana follow those of Paschimattanasana.

BENEFITS

Purvatanasana purifies and strengthens the heart, anus, spinal column, and waist.

ASPIRANTS SHOULD NOTE THAT, IMMEDIATELY FOLLOWING THE PERFORMANCE of an asana involving bending the body forward, one that is opposite (that is, one that bends the body backward) is to be done. Similarly, asanas in which the body bends backward should immediately be followed by ones bending the body forward. From this, any pain in the waist resulting, for example, from Paschimattanasana, will disappear.

13. Ardha Baddha Padma Paschimattanasana

There are twenty-two vinyasas with this asana, the 8th and 15th of which constitute its states.

METHOD

To begin, follow the first six vinyasas of the first Surya Namaskara. Next, sit as in the 7th vinyasa of Paschimattanasana, stretch the left leg out, place the right leg on the left thigh, pressing the right heel

into the navel, bring the right arm behind the back and grasp the big toe of the right foot, take the left foot with the left hand, straighten the head and chest, and do puraka slowly; this is the 7th vinyasa. Then, doing rechaka slowly, place the chin on the outstretched left leg, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Next, doing puraka slowly, lift only the head; this constitutes the 9th vinyasa. Then, unfolding the legs and crossing them, as in Paschimattanasana, lift up the entire body with the strength of the arms; this forms the 10th vinyasa. Next come the 11th, 12th, and 13th vinyasas, which resemble the 4th, 5th, and 6th vinyasas of Paschimattanasana. We are now back at the 7th vinyasa of the first Surya Namaskara. Doing puraka, jump the legs through the arms on the strength of the hands alone, stretch the right leg out, place the left leg on the right thigh, grasp the left big toe with the left hand from behind, take the right foot with the right hand, straighten the head and chest; this is the 14th vinyasa. Then, doing rechaka, place the chin on the right knee, which is stretched out flat, and do puraka and rechaka slowly, as much as possible; this is the 15th vinyasa. Then, doing puraka, lift the head only; this forms the 16th vinyasa. Next, unfold and cross the legs, lift the entire body up with the hands, doing puraka, and stay in this position; this constitutes the 17th vinyasa. Then, follow Paschimattanasana for the next five vinyasas (18th–22nd).

BENEFITS

The practice of this asana alleviates the enlargement of the liver and spleen. It also cures abdominal distention due to bad food and activities; the spoiling of the tissues due to a continually provoked vata; and weakness due to an inability to take food.3 Constipation is also cured, and the operation of the bowels is rendered easy.

14. Tiriangmukhaikapada Paschimattanasana

This asana has twenty-two vinyasas, with the 8th and 15th vinyasas constituting its states. The methods of vinyasa are the same as those for Ardha Baddha Padma Paschimattanasana. Indeed, the method of inhaling and exhaling for each vinyasa follows the same pattern throughout the asanas.

METHOD

Begin by doing the first six vinyasas of the first Surya Namaskara. At the 7th vinyasa, jump through the arms, sit as described in Paschimattanasana, stretch the left leg out, fold the right leg back, placing the right foot by the side of the thigh, join the knees together, take hold with both hands of the left foot, which is at a right angle to the floor, lift the head and chest up fully, and do puraka; this constitutes the 7th vinyasa. Then, doing rechaka slowly, place the forehead on the outstretched leg, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Next, doing puraka slowly, lift the head only; this is the 9th vinyasa. Then, do the 11th vinyasa described in Paschimattanasana; this forms the 10th vinyasa.

The next three vinyasas, namely the 11th, 12th, and 13th, follow the 4th, 5th, and 6th vinyasas of the first Surya Namaskara. Then, while again sitting in the 7th vinyasa of Paschimattanasana, stretch out the right leg, fold back the left leg in the same manner as the right leg above, take hold of the right foot with both hands, and lift the head and chest up, doing puraka; this constitutes the 14th vinyasa. Then, doing rechaka slowly, place the forehead on the outstretched knee, and do puraka and rechaka as much as possible; this is the 15th vinyasa. Then, doing puraka slowly, lift up only the head; this is the 16th vinyasa.

Next, the 17th vinyasa follows the method of the 10th vinyasa; the 18th vinyasa follows that of the 4th; the 19th follows that of the 5th; the 20th follows that of the 6th; the 21st follows that of the 3rd; and the 22nd vinyasa follows the method of the 2nd vinyasa of Paschimattanasana.

BENEFITS

Tiriangmukhaikapada Paschimattanasana cures a number of afflictions, including: body fat; water retention; thighs swollen out of proportion to the size of the body (elephant leg); piles; and sciatica. It also makes the body symmetrical. However, aspirants should not forget to do rechaka and puraka slowly and as much as possible, while in the state of this asana.

ASPIRANTS SHOULD NOTE THAT, THROUGH THE 6TH VINYASA OF THE FIRST Surya Namaskara, the opening vinyasas are the same for all the asanas. In addition, all asanas conclude with uth pluthi [lifting up off the floor with the strength of the arms], and then a jump back into the 4th vinyasa of the Surya Namaskara, followed by the 5th, 6th, 7th, and 8th vinyasas. Aspirants should know the methods for doing these vinyasas, as well as for rechaka and puraka. From this point on, I will describe only the vinyasas, the state, and the benefits of an individual asana. Readers and aspirants should learn these fully, which is best done under the guidance of a Guru.

15. Janu Shirshasana (A)

Janu Shirshasana, which some call Mahamudra, is of three types, each of which has twenty-two vinyasas. The 8th and 15th vinyasas are their states. Janu Shirshasana's method for rechaka and puraka follows that of preceding asanas. FOR ALL THE ASANAS, THE DETAILS OF THEIR BREATHING AND VINYASA methods, as well as of how to remain in their states in accordance with the vinyasa method, have to be learned from a Guru. Whatever my descriptions here, there will always be a difference in the actual method of a practice. For the convenience of the reader and aspirants, however, I have tried to be as descriptive as possible.

METHOD

For the 7th vinyasa of this asana, sit as in Paschimattanasana, stretch the left leg out, press the area between the anus and the organ of generation with the heel of the right foot, pulling the right knee back 90 , bend forward at the waist, take hold of the foot of the outstretched leg with both hands, tighten the anus and lower abdomen, straighten the back, lift the head fully, and do puraka. Next, doing rechaka slowly, place the forehead or chin on the knee of the outstretched leg, and do rechaka and puraka fully as much as possible; this is the 8th vinyasa. Then, doing puraka, lift up the head slowly; this is the 9th vinyasa. The next vinyasas follow those of preceding asanas. This asana is to be practiced for both the left and right sides.

While in the state of Janu Shirshasana (A), aspirants should not forget to do rechaka and puraka as deeply as possible. The reason I repeat this reminder so often is that the bodies of sadhakas will become as strong as diamonds through the practice of yoga. They should therefore not allow themselves to become indifferent, but should pursue their practices with faith and reverence.

15.1. Janu Shirshasana (B)

METHOD

In the 7th vinyasa of this asana, sit as in Paschimattanasana, stretch the left leg out straight, bend the right knee back 85°, sit the anus directly on top of the right heel, take hold of the left foot with both hands, tighten the anus and lower abdomen, straighten the back, lift the head fully, and do puraka. Next, doing rechaka slowly, place the forehead or chin on the knee of the outstretched leg, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Then, doing puraka, slowly lift the head; this is the 9th vinyasa. The next vinyasas follow those of preceding asanas. The method described above is to be practiced for both the left and right sides.

15.2. Janu Shirshasana (C)

METHOD

For the 7th vinyasa of this asana, again sit as in Paschimattanasana, stretch the left leg out straight, bring the right foot in toward the groin, twisting it so that the toes are pressed to the floor and the heel is pointing up toward the navel, press the right knee forward to a 45 angle, take hold of the left foot with both hands, straighten the back and arms, tighten the anus and lower abdomen, and do puraka. Then, doing rechaka and folding at the waist, place the forehead or chin on the outstretched leg, and press the right heel into the navel, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Again, doing puraka, lift the head and straighten the arms; this is the 9th vinyasa. The vinyasas that follow are as those in earlier asanas.

BENEFITS

Janu Shirshasana cures maladies such as muthra krcchra [burning while urinating], dhatu krcchra [semen loss], and diabetes. Fluids secreted by the digestive glands—the pancreas, liver, and so on—break down as a result of poor food habits, excessive coffee drinking, indiscriminate movements, the sight of bad things, poor sleeping habits, excessive sex, intercourse at the wrong times, and eating at the wrong times. When this happens, the liver becomes weak and food fails to digest. The vitality, which results from the transformation of digested food, breaks down and tissues become watery, and a man begins to lose his strength. As he weakens further, his urination becomes difficult to control, and he begins involuntarily to urinate. His organ of generation becomes weak and ailments such as muthra krcchra occur. Bedwetting then ensues and his semen is passed out with his urine. Afflictions such as swapna skalana [nocturnal emissions while dreaming] soon develop, weakening the body further. If an affliction of this kind overtakes the body, others will quickly follow, bringing death closer. As disorders such as muthra krcchra and dhatu krcchra are sometimes symptoms of diabetes, it is important to remedy them as early as possible. If one becomes indifferent to them and fails to cure them, then one will develop anemia, which may lead to emaciation and other ailments. It is thus important to be careful regarding these maladies. Medical experts call such ailments yapya roga. Janu Shirshasana destroys these terrible afflictions, and purifies and strengthens the nadi known as sivani, which is related to the dhatu. As the sivani nadi becomes stronger, it destroys defects of the dhatu, as well as diabetes. In addition, Janu Shirshasana purifies and strenghens the virya nala, the nadi that connects to the liver and is responsible for creating insulin. Janu Shirshasana (A & B) press on the virya nala for men, and Janu Shirshasana (C) presses on it for women, though all three are necessary and useful for both men and women alike. In this way, diseases of the type just described will be cured, the fire of hunger increased, and food digested easily.

Janu Shirshasana can be practiced by anyone, man or woman—irrespective of age or sex. In this context, I feel duty bound to say that the reason for the overpopulation of today's society is the sensory weakness of our youth. Whenever a person controls his sense organs, he has a limited number of children, produces progeny that are intelligent, healthy, and religious, and lives a long life. Therefore, young men and women should practice ways of controlling their sense organs and, thereby, of restricting the numbers of their children, instead of resorting to platform speeches or medical

operations, which are not very useful. 4 Artificial methods such as these, though helpful to a degree, do not destroy weakness.

If one wants to produce robust, intellectual, and long-lived children who believe in God, we must, in my humble opinion, learn ways to control our sense organs. Limiting the number of children is necessary, but it is best to avoid unnatural, allopathic means, which are against nature and bad for the body. Birth control by natural means, on the other hand, helps us to lead long, happy lives, while it, at the same time, nourishes our intellects and frees us from the scourge of disease. Without it, we become subject to sickness, poverty, and shortened lifespans. Aspirants should take this into account. Thus, those that want to lead long, happy lives free from illness, and want to bring forth offspring who are healthy and intellectual, must take to the philosophy of yoga and its practices. This the science of yoga declares like the sounding of a drum. And this I say again to the youth of today, so strongly do I feel about the matter.

By practicing Janu Shirshasana, the dhatu strengthens and, gradually, the vasana of kama [the tendency to desire] is destroyed. This is confirmed by the scriptures, and has been my own personal experience as well.

16. Marichyasana (A)

There are eight types of Marichyasana. The first four are related to yoga chikitsa [yoga therapy], and I will describe only these four here. Marichyasana was discovered by the sage Maricha, who gave it its name. The first and second forms of the asana (A & B) have twenty-two vinyasas, and the third and fourth (C & D) have eighteen vinyasas each. The states of Marichyasana (A) and (B), respectively, are the

8th and 15th vinyasas, and of Marichyasana (C) and (D), the 7th and 12th vinyasas. The methods for the vinyasas and for rechaka and puraka have been specified in earlier asanas.

METHOD

To begin, stretch the left leg out as for the 7th vinyasa of Paschimattanasana, bend the right knee up, pulling the right heel in toward the right buttock, take the right arm around the knee of the bent leg, bring the left hand behind the back and take hold of the right wrist, stretch the left leg, raise the chest, and do puraka slowly; this is the 7th vinyasa. Then, doing rechaka slowly, place the forehead or chin on the knee of the outstretched leg, keeping the outstretched leg straight and tight, and doing puraka and rechaka as much as possible; this constitutes the 8th vinyasa. Next, doing puraka, lift the head up; this is the 9th vinyasa. Then, Uth Pluthi is the 10th vinyasa. Practice in this way for both the right and left sides.

16.1. Marichyasana (B)

METHOD

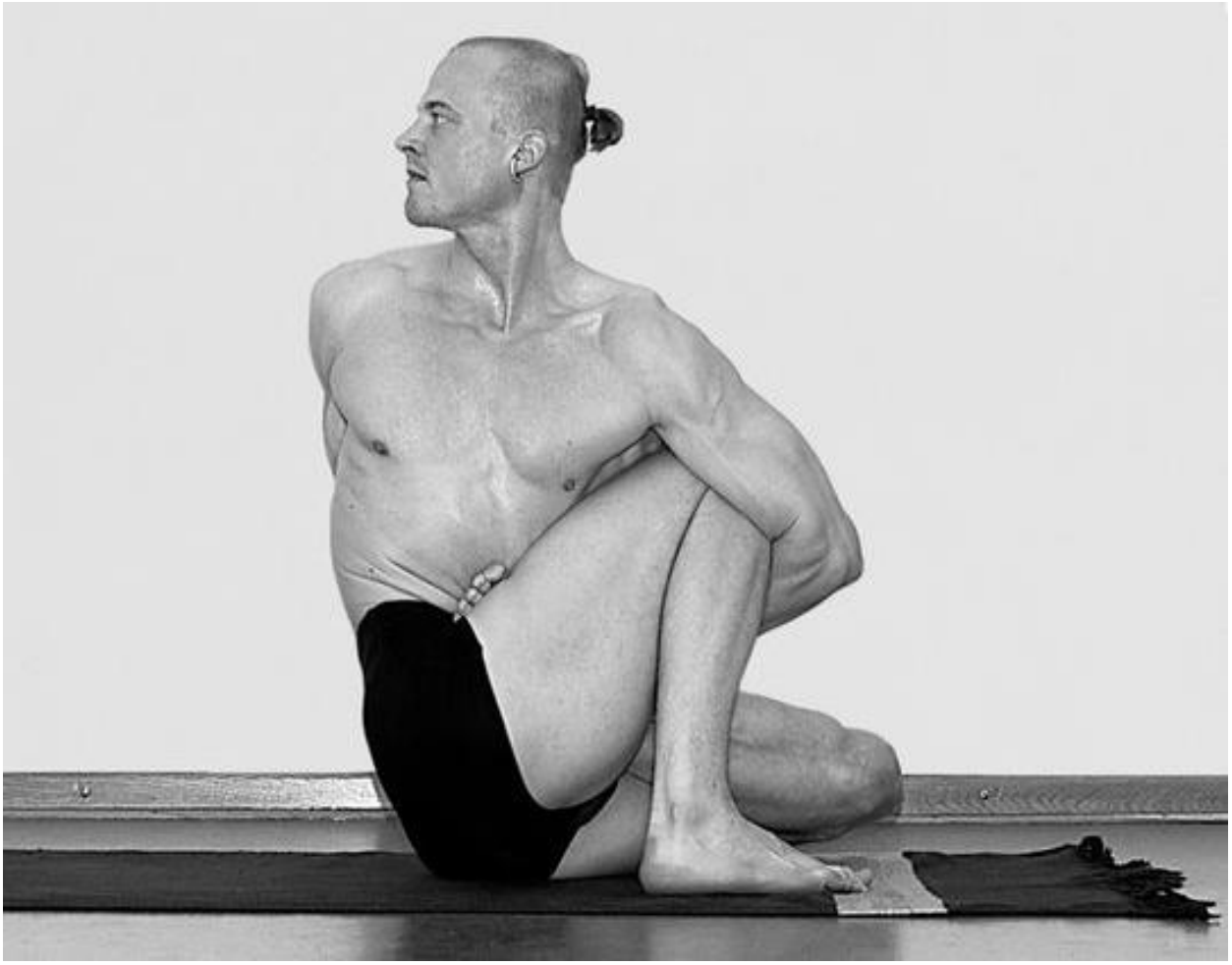
Do the first six vinyasas of the first Surya Namaskara. Then, in the 7th vinyasa, sit with the legs stretched out, bring the left heel toward the navel, as in Padmasana, bend the right knee, sit firmly with the right knee bent and right heel pulled toward the right buttock, bring the right arm around the right shin, grasp hold of the left wrist with the right hand, and do puraka; this is the 7th vinyasa. Next, doing rechaka, touch the nose to the floor, and do puraka and rechaka as much as possible; this is the 8th vinyasa and the state of the asana. Then, doing puraka, lift the head and straighten the chest; this is the 9th vinyasa. Next, follow the method of vinyasa specified in earlier asanas and then repeat the above for the left side.

16.2. Marichyasana (C)

METHOD

First, sit in the same manner as above, stretch the left leg out, press the right foot to the right buttock, as in Marichyasana (A), straighten the chest, turn the waist toward the right, bring the left arm around the front of the right knee, twisting the left hand and arm around toward the back, bring the right arm around the back and grasp the left wrist with the right hand, straighten and turn the chest and waist fully, doing rechaka and puraka as much as possible; this is the 7th vinyasa, and the asana's state. The vinyasas that follow are specified in earlier asanas. In the same manner, practice the above for the left side.

16.3. Marichyasana (D)



METHOD

Sit, bending the arms and legs as in Marichyasana (B), turn the waist, bring the left arm around the front of the right knee and around toward the back, as in Marichyasana (C), bring the right arm around the back and take hold of the left wrist with the right hand, turn the waist fully, lift the chest, doing rechaka and puraka slowly and deeply, as much as possible; this is the 7th vinyasa. In the same manner, practice the above for the left leg. The method for the vinyasas has been specified earlier.

BENEFITS

The benefits of the four Marichyasanas are different, though all cure diseases in accordance with man's physical nature. Aspirants should know this and practice them. They each cure gaseous movements in the stomach and intestines, as well as movements of the rectum, such as diarrhea, and restore digestive power. With that, flatulence, indigestion, and constipation are eliminated. Some women suffer from abdominal pain during menstruation. This is removed by the practice of these asanas. The womb becomes powerful and enables a woman to carry a child strongly, and miscarriage due to weakness is

cured. The vata pitta kosha [large intestine and gall bladder] are purified, as is the manipura chakra [the third chakra at the navel center], and the body gains strength and power. It is a very good idea for women to practice Marichyasana, but they should do so under the guidance of a Guru. There should be no error in sitting firmly and holding the hands and legs. Pregnant women should not practice this asana after the second month.

17. Navasana

There are thirteen vinyasas in Navasana and the 7th one is the state of the asana. The method for the vinyasas has been specified earlier.

METHOD

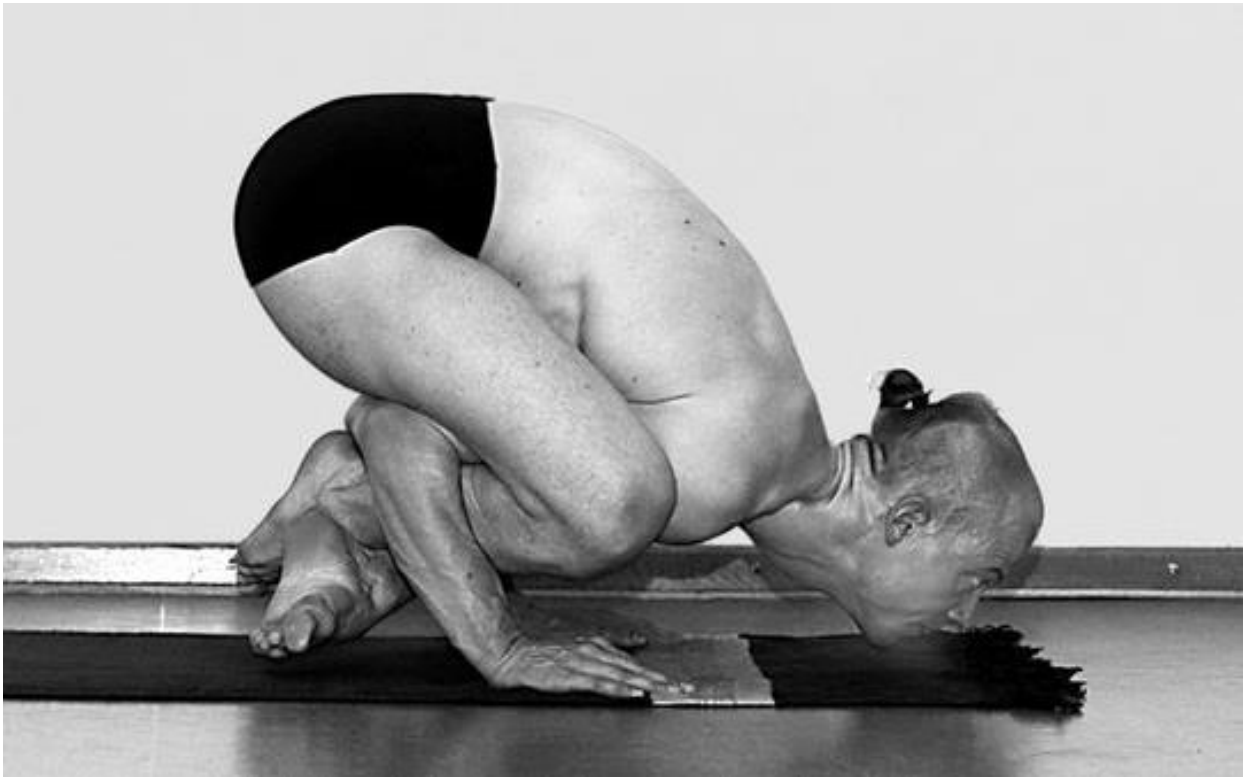
The first six vinyasas of this asana follow those of the first Surya Namaskara. To come into the 7th vinyasa, jump the legs in between the arms, doing puraka and using only the strength of the arms, and without allowing the body or legs to touch the floor, sit squarely on the buttocks, raise and straighten the legs, sit in the form of a boat, straighten the chest, waist, and legs, hold the arms out straight on either side of the knees, and do rechaka and puraka as much as possible; this is the 7th vinyasa. Then cross the legs without touching the floor, and use the strength of the arms and hands to lift the body up off the floor; this is the 8th vinyasa. (While going from the 7th to the 8th vinyasa, do puraka).

Then, doing rechaka, come back to the 7th vinyasa. In this way, repeat the asana three to six times. The vinyasas that follow have been specified earlier. While coming into the state of this asana, never do kumbhaka, that is, never hold your breath.

BENEFITS

The anal channel, spinal column, ribs, and lower abdomen are purified by Navasana. It also cures gastric trouble resulting from food not digesting completely and provoked vata due to a lack of digestive fire. The waist additionally gains strength.

18. Bhujapidasana



There are fifteen vinyasas in this asana, of which the 7th and 8th constitute the states of the asana.

METHOD

First, begin with the first six vinyasas of the first Surya Namaskara. Then, while coming into the 7th vinyasa and using the strength of the arms, jump the legs around the shoulders without touching the floor, doing puraka, place one foot over the other, squeeze the shoulders forcefully with the thighs, and straighten the arms; this is the 7th vinyasa. Then, slowly doing rechaka and without touching the legs or feet to the floor, touch only the chin to the floor, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Next, doing puraka, come back into the 7th vinyasa; this is the 9th vinyasa. Then, doing

rechaka, take back both legs without touching the floor, and balance them on the backs of the arms; this is 10th vinyasa. Then, again doing puraka and rechaka, come into the 4th vinyasa of the first Surya Namaskara; this is the 11th vinyasa. The next vinyasas follow those specified earlier.

BENEFITS

Bhujapidasana purifies the anna nala [food channel/esophagus], and the body becomes light, and the shoulders and waist become strong.

19. Kurmasana

Kurmasana has sixteen vinyasas, the 7th and 9th vinyasas of which constitute the states of the asana. The state of the 9th vinyasa is called Supta Kurmasana [Reclined Tortoise].

METHOD

Begin with the first 6 vinyasas of the first Surya Namaskara, as specified in earlier asanas. In the 7th vinyasa and doing puraka, jump as in Bhujapidasana, lower down to the floor with the strength of the arms, stretch the arms out under the thighs, straighten the legs, put the chin on the floor, lift the head to some extent, and do rechaka and puraka as much as possible. Then, doing rechaka, bring the hands up behind the back and take hold of the wrist; this is the 8th vinyasa. Next, cross the legs over each other, put the head on the floor, and do puraka and rechaka as much as possible; this is the 9th vinyasa, the state of which is called Supta Kurmasana. The next vinyasas follow those of Bhujapidasana.

BENEFITS

Kurmasana purifies the kanda, or nerve plexus in the anal region from which all 72,000 nadis grow. It also purifies the heart and lungs, and eliminates ailments caused by an imbalance of kapha dosha [phlegm]. The chest becomes broad, bad fat is dissolved, and the spinal column becomes strong. Chest pain due to over-tiredness is cured, disorders from bad food remedied, and the fat in the lower abdomen dissolved, allowing the body to become healthy.

20. Garbha Pindasana

There are fourteen vinyasas in Garbha Pindasana, the 8th of which is its state.

METHOD

Begin by doing the six vinyasas described in earlier asanas, and then sit in the 7th vinyasa of Paschimattanasana. Next, do Padmasana by placing the right foot on the left thigh and the left foot on the right thigh, insert both arms past the elbow through the openings between the thigh and calf, hold the ears with the hands, sitting purely on the buttocks, straighten the chest and spinal column, press both heels on either side of the navel, and remain in this position, doing rechaka and puraka as long as possible; this is the 7th vinyasa. Then, bend the head forward completely, take hold of the head with the hands and, doing rechaka, roll back on the spine, keeping the spine rounded. Next, doing puraka, roll forward toward the buttocks and, in this way, continue to roll in a clockwise direction until a full circle has been completed, doing rechaka on the roll back and puraka on the roll forward; this is the 8th vinyasa.

Next, roll forward and up, pressing the hands to the floor and lifting the body up off the floor, doing puraka; this is the 9th vinyasa. The vinyasas and breathing that follow are described in foregoing asanas.

BENEFITS

Garbha Pindasana dissolves the fat of the lower abdomen, purifies the manipura, or third, chakra, and wards off diseases of the liver and spleen.

21. Kukkutasana

Kukkutasana has fourteen vinyasas, the 8th of which is the state of the asana.

METHOD

Do Garbha Pindasana above until the 7th vinyasa, which means doing Padmasana and inserting the arms through the space behind the knees. Then, pressing the palms to the floor and doing puraka, lift up the Padmasana, and stand on the strength of the palms; this is the 8th vinyasa. Then, in this position, revolve the stomach (nauli), lift the back and chest fully, and do rechaka and puraka. Next, doing rechaka, come down slowly. The next vinyasas are the same as those for Garbha Pindasana.

When in the state of this asana, one should do rechaka and puraka deeply while keeping the chest, waist, and back completely straight. Then, with the heels pressing on either side of the navel and keeping the head lifted, one should do uddiyana bandha and nauli (see fn. 27). There is no mula bandha in this asana.

BENEFITS

By means of Kukkutasana, the intestines are purified, the fat of the lower abdomen dissolved, and diseases affecting the bowels and urinary tract, as well as excess phlegm, are cured.

22. Baddha Konasana

This asana has fifteen vinyasas. The 7th and 8th vinyasas constitute its states.

METHOD

After doing the first six vinyasas of the earlier asanas, come to the 7th vinyasa of Paschimattanasana, and doing puraka, join the feet, fold them open, press the heels to the sivani nadi [the nadi between the anus and the genitals], hold the feet open with both the hands, lift the chest, and sit with knees on the floor; this is the 7th vinyasa. Next, doing rechaka, fold forward, place the head on the floor, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Then, follow the vinyasas of earlier asanas.

BENEFITS

While in the states of this asana, one should do rechaka and tighten the anus fully. By pulling the stomach in completely, holding the lower abdomen and anus tightly, and practicing rechaka and puraka, terrible afflictions related to the anus, such as constipation and piles, will be destroyed, and indigestion will no longer haunt an aspirant. Vamana speaks of Baddha Konasana as the greatest of the asanas, and says: “Baddhakonasane tishtan gudamakunchayet buddha gudarognivrittih syat satyam satyam bravimyaham [The wise one should retract the anus while in Baddha Konasana as it wards off anal disease, this I declare is true].” Many have had the experience of being relieved of bhagandara [fistula] and mulavyadhi [hemorrhoids] by this asana. Thus, through its practice, diseases related to the anus and the dhatu will definitely be cured.

In this context, a point must be made to readers and aspirants that they should be careful to remember. When one follows the methods of asana and pranayama, there is no doubt that all diseases will be cured. But if an aspirant thinks that this will occur by his merely practicing asanas while continuing to eat rajasic [stimulating] and tamasic [heavy] foods, then he is misguided. Such a course will actually lead to an increase in sickness. For diseases related to the anus, sattvic and oily foods, such as milk, ghee, half-churned curds, are the best and, of the sattvic foods, only those that are thin (tanu) should be eaten. Thus, pure and pleasant foods should be consumed. By doing so, someone who is ill, but who practices asana and pranayama, will become strong in body, mind, sense organs, and intellect, and will be cured. The sick will become free of sickness and the weak will become strong, enabling them to

practice subsequent inner steps, such as pratyahara [withdrawal of the senses]. However, one should not abandon the practice of yoga after becoming disappointed or indifferent because of an inability to follow the sattvic diet strictly. The practice of yoga should continue to be pursued while following a diet suited to one's capacity. However, it is good to practice taking sattvic foods as much as possible.

23. Upavishta Konasana

Upavishta Konasana has fifteen vinyasas, the 8th and 9th of which are the states of the asana. The method for the vinyasas is described in earlier asanas.

METHOD

First, follow the vinyasas for the first Surya Namaskara through the 6th. Then, doing puraka and without touching the floor, jump the legs through the arms purely on the strength of the arms, spread the legs as wide as possible, sit with straightened knees, take hold of the sides of the feet, and lift the head and

chest; this forms the 7th vinyasa. Then, doing rechaka, pull in the stomach, slowly place the head and chest on the floor, and do puraka and rechaka slowly, as much as possible; this is the 8th vinyasa. (As your practice becomes firm, you should be able to rest your chin on the floor in the state of this asana while holding your feet.) Next, doing puraka, lift only the head, do rechaka, and without losing hold of the sides of the feet, come up to sit straight on the buttocks while doing puraka, hold the raised legs wide apart and straight, as in the 8th vinyasa, keep the chest, arms, and waist straight, look up, and do rechaka and puraka as much as possible; this is the 9th vinyasa. Then, follow earlier asanas for the next vinyasas.

BENEFITS

While in the states of Upavishta Konasana, holding mula bandha and uddiyana bandha is very important. If the nadi called grdhrasi [sciatic nerve], which is in the mid-region between the anus and the organ of generation, becomes weak, then the strength of the waist will decrease, and the other nadis will weaken as well. When the grdhrasi nadi is weak, the waist becomes stiff and sitting and walking become difficult. Through the practice of this asana, however, such afflictions will go. With the return of the grdhrasi nadi's strength, other nadis and organs also will become strong, and udara bhramana [gaseous movements in the stomach] will no longer occur, and peristalsis will be resolved. The practice of Upavishta Konasana, however, is not appropriate for pregnant women. Otherwise, it is useful for all, men and women alike.

24. Supta Konasana

Supta Konasana has sixteen vinyasas. The 8th vinyasa is the state of the asana.

METHOD

To begin, do the first six vinyasas of the first Surya Namaskara. Then, doing puraka, as in Paschimattanasana, lie flat on the floor, legs together, and stretch the legs out tightly; this is the 7th vinyasa. Do rechaka. Then, doing puraka, lift both the legs up and, doing rechaka, bring the legs over the head, open them out wide on the floor, and hold the big toes; this is the 8th vinyasa. Next, doing puraka

and without bending the legs, come up into the 9th vinyasa of Upavishta Konasana, exhale and slowly lower into the 8th vinyasa of Upavishta Konasana; this constitutes the 9th vinyasa. Then, doing puraka, lift only the head; this is the 10th vinyasa. The next vinyasas are the same as those in earlier asanas.

The state of Supta Konasana, which occurs in the 8th vinyasa, comprises lifting the legs, as in Sarvangasana [asana 32], doing rechaka and holding the legs as in Halasana [asana 33], placing the full weight of the body on the shoulders, holding the big toes with the hands, legs wide apart, and doing rechaka and puraka. While in the state, the abdomen should be drawn in completely, but not with mula bandha, or even uddiyana bandha. Aspirants should remember this.

BENEFITS

The benefits of Supta Konasana are the same as those for Baddha Konasana and Upavishta Konasana: the grdhrasi nadi becomes purified and the spinal column and waist become strong.

25. Supta Padangushtasana

Supta Padangushtasana is a two-part asana, the first part consisting of twenty vinyasas, and the second of twenty-eight. The 9th and 13th vinyasas constitute the states of the first part, and the 11th and 19th vinyasas, the states of the second. While in the states of this asana, aspirants must be mindful to practice the breathing methods with attention. As this is an asana unlike previous ones, I feel prompted to repeat this.

METHOD FOR (PART 1)

First, lie down on the back, as in the preparations for Sarvangasana [asana 32], doing rechaka and puraka; this is the 7th vinyasa. Then, doing puraka, bring the straightened right leg up toward the head, straighten the left leg, strongly take hold of the big toe of the right leg with the right hand, press the left hand firmly on the left thigh, and lie flat, keeping the head on the floor; this is the 8th vinyasa. Then, doing rechaka, lift only the head a little, touch the nose to the straightened right knee, and do puraka and rechaka as much as possible; this is the 9th vinyasa. Next, doing puraka, lower the head to the floor; this is the 10th vinyasa. Next, doing rechaka, lower the right leg to the floor and join the legs together; this is the 11th vinyasa. Repeat the above for the left leg. Then, come into the position of Halasana [asana 33], press the hands to the floor by the ears, and roll the whole body back over the head, coming into the position of the 4th vinyasa. This is called Chakrasana. The next vinyasas follow those of the previous asanas. This is the first part.

METHOD FOR (PART 2)

Perform the first ten vinyasas of Part 1. Then, doing rechaka, bring the right leg out to the right and lower it to the floor and do rechaka and puraka as much as possible; this is the 11th vinyasa. Then, doing puraka , raise the right leg, and return to the 8th vinyasa of Part 1; this is the 12th vinyasa. Next, doing rechaka, touch the nose to the knee; this is the 13th vinyasa. Then, doing puraka, lower the head to the floor; this is the 14th vinyasa. Then, the next vinyasas repeat the above for the left side. Indeed, whatever the asana, one should practice first on the right side and then on the left side. This is the second part of Supta Padangushtasana, both parts of which are very important.

BENEFITS

Supta Padangushtasana purifies and strengthens the waist region, knees, food and anal channels, and the sperm passageway (virya nala). It dissolves the bad fat on the sides of the body and the waist,

making the waist slender and strong, and the body light. Supta Padangushtasana can be done by all and sundry, except pregnant women.

26. Ubhaya Padangushtasana

Ubhaya Padangushtasana has fifteen vinyasas, the 9th of which is its state.

METHOD

Having reached the 7th vinyasa of Supta Padangushtasana, lie down and join the legs. Then, doing puraka, straighten both legs, as in Sarvangasana [asana 32], and doing rechaka, as in Halasana [asana 33], bring the legs up over the head, place the feet on the floor, and tightly take hold of the big toes; this is the 8th vinyasa. Next, doing puraka and without letting go of the toes, roll forward, and come to sit purely on the buttocks in the manner of Navasana, doing rechaka and puraka; this is the 9th vinyasa. The next vinyasas follow those of earlier asanas. In the 8th vinyasa of this asana, both rechaka and puraka occur. Aspirants should note this. While sitting in the 9th vinyasa, rechaka and puraka should be done slowly and as much as possible, and the chest lifted and stomach drawn in fully.

BENEFITS

Ubhaya Padangushtasana is an asana that purifies the anus, waist, stomach, genital organs, and the granthi traya, or the three knots below the vina danda, which begin at the anal canal.5 It also eliminates the burning sensation that can occur during urination.

27. Urdhva Mukha Paschimattanasana

Urdhva Mukha Paschimattanasana has sixteen vinyasas, the 10th of which is its state.

METHOD

To begin, lie in the 8th vinyasa of Ubhaya Padangushtasana, and take hold of the sides of the feet near the heels. Then, doing puraka, come into the state of Ubhaya Padangushtasana with straightened knees and sitting firmly on the buttocks while holding the feet, not the toes; this constitutes the 9th vinyasa. Next, doing rechaka, place the face between the knees slowly, then do puraka and rechaka; this is the 10th vinyasa. Next, doing puraka slowly, come back into the 9th vinyasa of Ubhaya Padangushtasana, and sit. The vinyasas that follow are the same as those for Paschimattanasana.

BENEFITS

Urdhva Mukha Paschimattanasana purifies the katti granthi [lower back], the esophagus, and the swadishtana chakra, or region between the anus and navel. When the swadishtana chakra is purified, bodily activities become light, all physical activities are free and easy, and impediments, such as disease, do not torture one.

28. Setu Bandhasana

Setu Bandhasana has fifteen vinyasas, of which the 9th is the state.

METHOD

Do the first six vinyasas specified in earlier asanas, and lie down, as in Supta Padangushtasana; this is the 7th vinyasa. Next, do puraka. Then, doing rechaka, bend the knees a little, join the heels together, placing the little toes firmly on the floor, bend the head back, place the top of the head on the floor, lift the chest a little, and maintain position, bending the back; this is the 8th vinyasa. Then, crossing the arms over the chest and doing puraka, lift up the waist and back, and stand straightly on the head and feet alone, while doing rechaka and puraka as much as possible; this is the 9th vinyasa. Then, doing rechaka slowly, lie down; this is the 10th vinyasa. Next, doing puraka again, raise the straightened legs toward the head, press the hands to the floor on either side of the head, do rechaka, lift the head and roll the body over on the strength of the arms, and come into the 4th vinyasa of the first Surya Namaskara ; this is the 11th vinyasa. The next vinyasas follow those of previous asanas.

BENEFITS

Setu Bandhasana purifies and strengthens the waist and neck, purifies the muladhara chakra [root chakra], and increases the jathara agni, or digestive fire. It also purifies the esophagus, heart, and lungs, making them strong.

THE ASANAS DESCRIBED THUS FAR HAVE BEEN ORGANIZED SYSTEMATICALLY AND should only be practiced in the order in which they are presented here, as they purify all the organs of the body in a methodical manner. One asana must not be performed at the expense of another, because the muscles on one side of the body will become strong while those on the other will weaken. In other words, the order of these asanas should be followed faithfully by aspirants.

Most of the asanas just described are related to yoga chikitsa, or yoga therapy. Others are shodhaka [purificatory]. They can be practiced by anyone, men and women alike, except by women who are more

than four months pregnant.6 Even the very elderly who practice them knowledgeably will find their bodies becoming soft and light, and increasingly under their own control. This does not mean, however, that they should be learned from pictures or books. On the contrary, they should be practiced under the tutelage of a benevolent Satguru. This I repeat over and over again in order that aspirants will remember it.

Following this initial sequence, the succeeding asanas can usually be done by one and all. Those described next, especially, should be practiced every day by everyone. Practicing the asanas described above every day is also a good idea. When time is short, it is not necessary to practice every asana, though those that are done should be practiced in a systematic manner. After a practice becomes firm, it is useful to set aside enough time every day to complete a full practice. Again, the asanas I describe next should be practiced daily for good health.

29. Sarvangasana

Sarvangasana has thirteen vinyasas, of which the 8th is its state. As the next five asanas are related to Sarvanagasana, I will describe their respective fruits collectively.

METHOD

To begin, do the first six vinyasas of the first Surya Namaskara. Next, coming into the 7th vinyasa of paschimattanasana, lie down, arms by the sides and legs straight; this is the 7th vinyasa, during which puraka and rechaka should be done four to five times deeply. Then, with the legs held straight and

tightly together, slowly raise the legs up over the head, doing puraka, and put the full weight of the body on the shoulders only, hands holding the waist, and elbows pressed to the floor; this is the 8th vinyasa. (In the 8th vinyasa, the chin should press into the chest properly, the legs be held straight, and the big toes and tip of the nose should form a single line.) Stay in this state for five, ten, fifteen, even thirty minutes, doing rechaka and puraka deeply. Then, lower the legs toward the head, doing rechaka, place the hands on the floor on either side of the head, push the legs back and behind and, lifting the head, come into the 4th vinyasa of the first Surya Namaskara; this is the 9th vinyasa. Then follow the vinyasas specified in earlier asanas.

30. Halasana

Halasana has thirteen vinyasas, the 8th of which is the state of the asana.

METHOD

Do the first seven vinyasas described in Sarvangasana. Then, doing puraka, join together and raise the legs, as in Sarvangasana, and doing rechaka slowly, lower the legs to the floor over the head, keeping them straight, place the feet on the floor, lock the fingers behind the back, arms tight and straight, press the chin into the chest without bending the legs, and do puraka and rechaka deeply, as much as possible; this constitutes the 8th vinyasa. The next vinyasas follow those of Sarvangasana. Aspirants should note that rechaka and puraka both occur in the 8th vinyasa.

31. Karnapidasana

There are thirteen vinyasas in this asana and the 8th is the state of the asana.

METHOD

To start, lie down, as in Sarvangasana; this is the 7th vinyasa. Then, doing puraka, proceed to the 8th vinyasa of Sarvangasana, which is Karnapidasana's state and, doing rechaka, lower the legs to the floor, as in Halasana, bring the knees to the floor, take hold of the ears tightly with the knees, lower the arms to the floor, lock the fingers, and do puraka and rechaka as much as possible; this is the 8th vinyasa. In the state of this asana, the stomach should be drawn in fully without tightening the anus, and rechaka and puraka performed.

32. Urdhva Padmasana

Urdhva Padmasana has fourteen vinyasas, of which the 9th vinyasa is its state.

METHOD

Do all vinyasas outlined above through to the state of Sarvangasana; this is the 8th vinyasa. Then, maintaining the same state and doing rechaka, do Padmasana; this is the 9th vinyasa. While in this state, tighten the anus, draw in the stomach fully, hold the knees with the hands, straighten the arms, and slowly do puraka and rechaka as much as possible. Then, doing puraka and rechaka, unlock the legs and come into the 4th vinyasa of Sarvangasana; this is the 10th vinyasa. The subsequent vinyasas are as those for Sarvangasana.

33. Pindasana

Pindasana has fourteen vinyasas. The 9th is the state of the asana.

METHOD

First, follow the vinyasass of Urdhva Padmasana above through to the 9th vinyasa; this is the 8th vinyasa. Then, doing puraka and then rechaka, bring the legs in Padmasana slowly down to the forehead, envelop the thighs with the arms, embrace the Padmasana, hold the wrists tightly, balance the body on the shoulders only, and slowly do puraka and rechaka as much as possible; this is the 9th vinyasa. Subsequent vinyasas are as those of Sarvangasana.

MOST PEOPLE WITH SOME KNOWLEDGE OF YOGA KNOW ABOUT SARVANGASANA. They may not know the method for the vinyasas, but it is my belief that they have heard, at least, of Sarvangasana itself.

What they may not be aware of, however, is the order in which the asanas associated with it must be performed, or how steady to make the rechaka and puraka, or how much time to devote to their practice. This is because they get their information from books on the practice of yoga written by people who want to spread word of the science of yoga out of a love and respect for it, but without knowing it properly themselves. If we read these books, we notice that the relation between one asana and another, and a description of rechaka and puraka, are nowhere to be found; moreover, in such books, differences regarding the methods of practice abound.

It is my view that it is better to put accurate knowledge before aspirants. I have thus tried to write this book in such a way that, if readers follow its methods properly, they will derive some benefit from what it describes. In the modern world, people have many kinds of fears and inaccurate notions about the science of yoga. In order to allay such fears and correct such notions, the path of yoga should first be practiced in accordance with the scriptures, its fruits experienced, and then be passed on to others. As many great people in the world are knowledgeable about the science of yoga, they should foster able disciples, direct them on the proper path, and then send them forth for the benefit of the universe. It is not enough to lecture: “Simply do it; you will profit.” One must be able to demonstrate what one speaks of. This is the prime goal of yoga.

The shastrakaras refer to Sarvangasana and Shirshasana [asana 39] as “viparita karani.”7 Just as a country’s king and ministers are important, so too, for the practice of yoganga [yogic limbs], are these two asanas important. Accordingly, having started with the Surya Namaskara and then proceeded through all the other asanas, one should end with these seven asanas, the order of which must never vary: Sarvangasana; Halasana; Karnapidasana; Urdhva Padmasana; Pindasana; Matsyasana; and Uttana Padasana.

Again, these seven asanas must be practiced systematically; after finishing them, one should never go on to do an asana like Paschimattanasana . Only the five asanas just described and those ahead — Matsyasana, Uttana Padasana, and Shirshasana—should be practiced after all the other asanas have been done. Otherwise, it could be harmful to an aspirant. Therefore, one should practice following only the methods specified here. This is the rule, which must never be forgotten.

BENEFITS OF ASANAS 32 TO 36

Some of the five asanas just described strengthen the skeletal muscles, others purify different parts of the body, and still others purify and strengthen the inner nadis, chakras, sira, dhamani [blood vessels and neural network], three doshas, digestive system, and the jathara agni. Normally, the food we eat mixes with bile and is well digested, with the result that the essence of the digested food becomes blood. The transformation of every thirty-second drop of blood is vitality, and the thirty-second transformation of this vitality is called bindu [nectar; droplet], which is also known to yogis as amrita bindu, or drop of immortality. Amrita bindu pervades all parts and limbs of the body, strengthening, nourishing, and soothing them. As long as amrita bindu remains in the body, life abides in the body. But when amrita bindu attenuates, death is drawn closer. As a scriptural statement states: “Maranam bindu patena jivanam bindu dharanat [The falling of the drop is death, while retaining bindu is life].”

Therefore, we have first to preserve amrita bindu. It has to be purified and preserved properly, and this can be achieved by no other method than Sarvangasana and the other asanas outlined above. These five asanas purify all parts of the body, and stimulate bindu to pervade it. Sarvangasana purifies the heart, lungs, and all other parts of the body by making the blood hot. That is probably why it has earned the name Sarvangasana. By means of these five asanas, the vishuddhi chakra [throat chakra], heart, lungs, limbs, digestive system, and jathara [stomach] are purified, and perversions of the vital wind, which result in hiccups, dry cough, constipation, and indigestion, as well as high blood pressure, are warded off. They also prevent illnesses such as asthma, and ailments related to the heart. Doctors believe that changes in the vata, pitta, or kapha dosas cause disease. If there is a change in the kapha dosa, the defective kapha increases and travels to the lungs, where it congeals and impedes respiration, weakening the body. Such a disease results from contact with contaminated food, vihara dosa [inappropriate recreation], or contact with contagious people.

Illnesses related to the heart and nadis, doctors believe, are yapya, or congenital; they are a deformation of prakriti [nature]. Medical cures for yapya rogas are futile; though the treatments for them may lead a person to feel better for a while, they can never be fully successful. Like a thorn in a leg that is removed by another thorn, these diseases are not curable by medicine. Allopathic doctors are unable to cure them and, after look-ing into the yoga shastras, they have rightly begun to believe that many physical and mental ailments can be remedied by natural therapies, which is the path of yoga. Sarvangasana cures all diseases, purifies the vishuddhi chakra, and makes the amrita bindu firm.

Halasana purifies the intestines, the region of the waist, and the throat channel, and strengthens them.

By means of an asana such as Sarvangasana, ailments of the throat or those likely to affect the throat, are destroyed, including the inability to pronounce words clearly, throat pain, and diseases associated with the heart. Sarvangasana also purifies the base of the throat (kanta kupa), prevents choking, and stops the appearance of boils caused by internal heat. In addition, musicians who practice this asana for a period of time will find that it helps their singing become melodious and tuneful.

Karnapidasana eliminates diseases of the ears, such as those that cause pus and blood to flow frequently, or a ringing in the ears. If such things are ignored, men gradually lose their hearing. It is thus better to cure them as early as possible with Karnapidasana.

Urdhva Padmasana purifies the anal and urinary channels, and causes the anterior section of the spinal column to become firm. Pindasana purifies the lower abdomen, the spinal column, liver and spleen, and the stomach.

The five asanas associated with Sarvangasana involve bending the body forward. The next two, namely Matsyasana and Uttana Padasana, bend the body back.

The five asanas described above must be practiced systematically. After practicing them, an aspirant should not go on to practice other asanas, such as Paschimattanasana. Following these five,

Matsyasana, Uttana Padasana, and Shirshasana should be practiced. To do otherwise would be harmful to an aspirant.

Therefore, the method specified here should be followed during practice. This is the niyama [rule], which an aspirant should never forget.

34. Matsyasana

Matsyasana has thirteen vinyasas, the 8th of which is its state.

METHOD

To begin, lie down, as in Sarvangasana; this is the 7th vinyasa. Then, doing puraka and Padmasana, press the hands to the floor on either side of the head and, doing rechaka, lift the head up and place the crown of the head on the floor, bend the back up by lifting the waist, take hold of the feet, straighten the arms, and do puraka and rechaka as much as possible; this is the 8th vinyasa. Then, do puraka and next rechaka, lower the head, unfold the legs from Padmasana, hold the legs and feet as in Halasana, place the hands next to the ears and roll over into the 4th vinyasa of the first Surya Namaskara; this is the 9th vinyasa, which is called Chakrasana. The next vinyasas are the same as those in earlier asanas.

35. Uttana Padasana

Uttana Padasana has thirteen vinyasas, of which the 8th is its state.

METHOD

Perform all the vinyasas from the beginning of Sarvangasana to the 7th vinyasa; this is also the 7th vinyasa of Uttana Padasana. Then, as in Matsyasana above, lift the head, place the crown of the head on the floor, arch the back, extend the legs, as in Navasana, hold straightened arms out parallel with the legs, bring the palms together, tighten the entire body, and do rechaka and puraka as much as possible; this is the 8th vinyasa. Then do the 9th vinyasa of Matsyasana, and roll into the 4th vinyasa of the first

Surya Namaskara; this is the 9th vinyasa. The next vinyasas follow those of earlier asanas.

BENEFITS OF ASANAS 37 & 38

Matsyasana and Uttana Padasana counterpose the five asanas that precede them and remove the shoulder and waist pain that result from their practice. They also purify the esophagus and anus, as well

as the liver and spleen, and furnish the waist and neck with increasing strength. Matsyasana and Uttana Padasana should be practiced after Sarvangasana and the like are completed.

I HAVE DESCRIBED EACH OF THE SEVEN ASANAS ABOVE AND THEIR VINYASA methods separately to help aspirants better understand them. However, it is not necessary to do all the vinyasas specified for each asana, as this would take a very long time. Instead, one should practice consolidating them, after having clearly grasped the importance of the steadiness of rechaka and puraka. Thus, after Sarvangasana, one should do Halasana, then come into the state of Karna Pidasana, followed by Urdhva Padmasana, then do Pindasana and, finishing puraka, move into the state of Matsyasana while doing rechaka, and then, pass into the state of Uttana Padasana, and finally, doing puraka and rechaka, do Chakrasana. Aspirants should keep this method in mind.

36. Shirshasana

Some people call this asana Kapalasana or Viparita Karani but, as it is most commonly known as Shirshasana, we have called it so as well. Shirshasana has thirteen vinyasas; the 8th constitutes its state. (Pregnant women should not practice this asana.)

METHOD

While coming from the 6th to the 7th vinyasa of the first Surya Namaskara and doing puraka, sit on the knees, lock the fingers together and place the elbows on the floor; this is the 7th vinyasa. Then, doing rechaka and then puraka, place the crown of the head on the floor, interlocked hands cupping the back of the head and, doing rechaka and puraka again, straighten the legs and, keeping them together and straight, lift them up with the power of the arms, tighten the body, point the toes, and keep the body erect using the strength of the arms; this is the 8th vinyasa, during which rechaka and puraka should be done slowly and as many times as possible. Then, doing rechaka slowly, bring the feet back down onto the floor, rest with the buttocks on the heels and the head on the floor for two minutes. Next, doing puraka and then rechaka, jump back into the 4th vinyasa of the first Surya Namaskara; this is the 9th vinyasa. The next vinyasas are as those described above.

Aspirants should note that merely putting the head down and legs up, and then standing upside down is not Shirshasana; very simply, this is wrong. Indeed, no one should be deluded into thinking that Shirshasana is an easy asana. The proper method for it must be carefully learned. For example, the entire body must stand upside down on the strength of the arms alone. If the full bodily burden is carried by the head, the circulation of the blood from the heart, which is flowing properly to the limbs, will be prevented from making its way to the subtle nadis in the crown of the head, which is pressed to the floor. Then, following the descent from the state of the asana, there is the possibility that the subtle nadis in the brain could become spoiled by the inrush of blood when the head is lifted. This could impede bodily and intellectual growth, and lead to delusions, mental abnormalities, illness, or a shortened life. Aspirants should therefore practice this asana knowledgeably and with great care. Some people, ignorant of the proper method, practice Shirshasana after seeing it in a book or photograph, and so subject themselves to numerous problems, and even inspire fear in others who practice the asana correctly, as I have witnessed from my own experience. I have also come across situations in which many ailments resulting from the improper practice of this asana have been cured by an aspirant's learning the method properly.

Thus, let me repeat again that aspirants should take great care with Shirshasana.

Some say that practitioners should stay in this asana for only two to five minutes; otherwise, harm could come to them. It must be stressed, however, that this is not correct, as the following scriptural saying attests: "Yama matram vashe nityam [We can dwell in (Shirshasana) for three hours]." This is a view supported by experienced and learned people well-versed in the scriptures. It is also the right one.

One yama equals three hours. To be able to stay in Shirshasana for three hours, an aspirant should begin by practicing it first for five, then ten, and then fifteen minutes, that is, he should gradually increase the time in the state of Shirshasana by increments of five minutes. In this way and by force of slowly practicing over many days, months, and years, an aspirant should be able to stay in the asana for a full three hours. Practiced in this way, Shirshasana will nourish the body, sense organs, mind, and intellect, and thereby promote their evolution. However, if an aspirant stays in the state of Shirshasana for one to five minutes, or even less than a minute, he will not get the specified benefits. In

Shirshasana's state, both the lower abdomen and the anus should be taken in fully and held tightly— in other words, mula bandha should be done. In addition, the entire body should be kept erect and rechaka and puraka performed deeply, without kumbhaka.

BENEFITS

Through the practice of Shirshasana, the subtle nadis of the head—that is, those related to the brain and sense organs, such as the eyes—are purified by an inflow of warm blood, and the power of memory is increased. Eye disease is destroyed, the eyes glow, and long-sightedness improves. The five sense organs, too, become purified. Moreover—and by means of this asana only—the bindu that results from the transformation of food into blood and is preserved through pure food and fresh air (both of which are needed for the body's survival) is able to reach the sahasrara chakra (the seventh and highest chakra, where spiritual illumination occurs). Knowledgeable people regard the attenuation of amrita bindu as death and its preservation as life. It is better, therefore, to preserve it. As long as there is pure bindu in our bodies, fresh youthfulness will be manifest in us. As experience demonstrates again and again, practicing without fail for a long time not only endows the body with power and brightness, but increases intellectual power. This is affirmed by the yoga shastra: "Maranam bindu patena / Jivanam bindu dharanat / Tasmat sarvaprayatnena / Bindu dharanam abhyaset [Loss of bindu is death / and the preservation of it, life / So, by all means / is the holding of bindu to be preserved]."

To repeat, with bindu's loss comes death; with its retention, life. Thus men should practice to preserve it with all their might. And preserving bindu is what Shirshasana does. Yet no amount of writing can convey the utility of this asana. An aspirant can only enjoy its happiness through its practice. It is impossible to try to describe the sweetness of sugar. Only by tasting sugar can the experience of its sweetness be had, even for Brahma [God]. Just as people feel the sweetness of sugar by eating it, so too will they experience the happiness of this asana by practicing it.

As I mentioned earlier, there are differences of opinion about the practice of Shirshasana and other yogasanas. According to some, delusions and other afflictions result from the over-practice of Shirshasana, and it may also weaken the heart. Indeed, it is claimed that it is harmful to practice for any amount of time. This, at least, is the theory propounded in books written by publicity-hungry people who may or may not practice yoga, or who call themselves yogis out of some attachment to the yogic science. And, to some extent, their words are true, at least for those who think they are practicing Shirshasana when they put their heads down on the floor and their legs up in the air whenever the fancy strikes them.

Not surprisingly, such theories create great fear in people who have the zeal, godly devotion, and desire to practice yoga, and those that advance them gain names for themselves and great fame. After all, when someone achieves something others have not, can fame not come as a result? But there are no grounds for such wrongheaded notions whatsoever. Indeed, if there were any danger in yoga, people long ago would have lost interest in the science, become indifferent to its practice, and declared its sayings, the sayings of the greatest of the great yogis, such as Patanjali, to be a bundle of myths.

But how can there be any danger if one follows the path of those who have studied the shastras fully, correctly, and in the traditional manner, and who understand their meaning; where can be the harm if one reads the scriptures properly, understands them rightly, and practices under the guidance of a pious Guru for many years, and gains experience, and follows the path of people of this kind? For the great souls of the world who, toiling incessantly, have renounced all pleasures and wealth, thinking that selfless service is man's true goal, and who, knowing yoga's real nature first themselves, have resolved to help others, seek nothing else in the world but this service. Thus, as these great souls are the helpers of the world, then to follow their path and learn the scriptures correctly is to find no danger come to oneself.

Claims are also made that Shirshasana or yoga of any kind should not be practiced by people after they have reached the age of forty. This is not borne out by experience or by the shastrakaras. After all, great seers such as Patanjali brought us the science of yoga for the cure of diseases and, very naturally, embodied beings are prone to things of this kind. Do diseases not haunt men after forty? The body is the abode of disease. If it is tired due to a lack of food, sleep, or the like, or from great difficulty or poverty, disease will overtake it. Therefore, it is essential to cure it of its ailments. From this standpoint, as the mind weakens in old age, the sense organs weaken, too. When the mind is weak, diseases can easily overtake the body. Therefore, a mental cure too is a must. In short, there is no age restriction for the practice of yoga. As the shastrakaras say: "Yuva vrddho'tivrddho va vyadito durbalo'piva / Abhyasat siddhim apnoti / Sarvayogeshvatandritah [Whether young or old, or very old / sick or debilitated / one who is vigilant attains, by means of practice, success in all the yogas.]"9 This means that whether one is young or old ("old" here meaning above sixty years of age, and "very old," beyond ninety), whether one is a woman or a man, or suffering from a disease or weakness, if one practices yoga, then one can attain perfection. Indeed, anyone—men and women of all ages, sick or weak—can practice yoga, except those who are lazy.

Finally, it is the claim of some books that Shirshasana should be the first asana aspirants practice, followed by the others. This is contrary to the scriptures and not borne out by experience. Moreover, such a claim is made by those who do not know the nature of the body. Shirshasana always creates peace of mind and alleviates the fatigue of the body. According to experts in the field of the Ayurveda shastra, as well as those experienced in the subject, if one does Shirshasana first, after getting up before five o'clock in the morning and doing one's morning ablutions, it can lead to all sorts of trouble. This is so because ordinarily the food we eat at night, which is responsible for nourishing the body, is transformed into the seven dhatus. Food eaten during the day is not as effective for this purpose. In order for the food that we eat to be digested, and thereby to become one with our blood, it must join with the bile of the liver; only if the bile mixes with our food is the food digested and transformed into the seven dhatus. That part of what we eat that the body has no use for is eliminated in the form of feces, urine, sweat, and phlegm. For the bile produced by the liver to become one with our food, it must leave the liver. Until bile mixes with food, digests it, and then returns to its own source, namely the liver, things that lead to pitta vikara [activities that aggravate the liver and create excess heat] should not be engaged in. This is the rule. And this being so, if one does Shirshasana immediately after getting

up in the morning, while the bile is still pervading the limbs of the body, and does not first do the Surya Namaskara and the other asanas, then the bile will not return to the liver, but will flow in various directions and spoil the brain. If one first practices the Surya Namaskara and then the other asanas, however, then one's blood will become hot and pure, and will flow to every part of the body, decreasing the excitement of the bile. If one then practices the seven asanas of Sarvangasana, followed by Shirshasana, then one's heart, intellect, and mind will evolve, preventing any harm from coming to the brain, and ensuring a long life. Hence, aspirants should never practice Shirshasana first. Moreover, following Shirshasana, they should only sit in Padmasana and do pranayama and the like, but no further asanas. Otherwise, danger is certain.

37. Baddha Padmasana

Baddha Padmasana is the asana to be practiced after Shirshasana. It is of two types: Baddha Padmasana and Kevala [Simple] Padmasana. Yoga Mudra occurs in Baddha Padmasana, and is therapeutic for diseases. Padmasana is useful for practices such as dhyana [meditation] and pranayama. It is also useful for the practices of the bandhas and mudras. Baddha Padmasana has sixteen vinyasas, the 8th of which is its state, and the 9th of which is Yoga Mudra, which is very important. Aspirants should note this.

METHOD

To begin, do the first six vinyasas of the first Surya Namaskara. Then, sit and stretch the legs out, as in Paschimattanasana, straighten the back and chest, and do rechaka and puraka; this is the 7th vinyasa. Next, place the right foot on the left thigh and the left foot on the right thigh, press the heels of both feet into the lower abdomen on either side of the navel, reach around the back, take hold of the left big toe with the left hand and the right big toe with the right hand, push the chest forward, straighten the spinal column and waist, bend the neck forward so that the chin presses into the chest, and do rechaka and puraka deeply; this is the 8th vinyasa. Then, doing rechaka slowly, place the chin on the floor, pull the navel in completely, stiffen and push the body all the way forward, and do puraka and rechaka; this is the 9th vinyasa, which is known as Yoga Mudra. Then, doing puraka and without letting go of the toes, lift the head up, sit up straight, and push the chest out; this is the 10th vinyasa. The next vinyasas follow those of preceding asanas.

38. Padmasana

Kevala, or Simple, Padmasana, as this asana is also called, is useful for the practice of pranayama, dhyana, sandhya vandana [Brahmin ritual performed at sunrise and sunset], and puja [worship], among others. To practice these, one should sit in Kevala Padmasana after doing Baddha Padmasana.

METHOD

To start, follow the vinyasas above for Baddha Padmasana through the 7th vinyasa. Then, place the right foot on the left thigh and the left foot on the right thigh, press the heels into the lower abdomen on either side of the navel, make the knees rest on the floor, place the hands on the knees, sit up, and

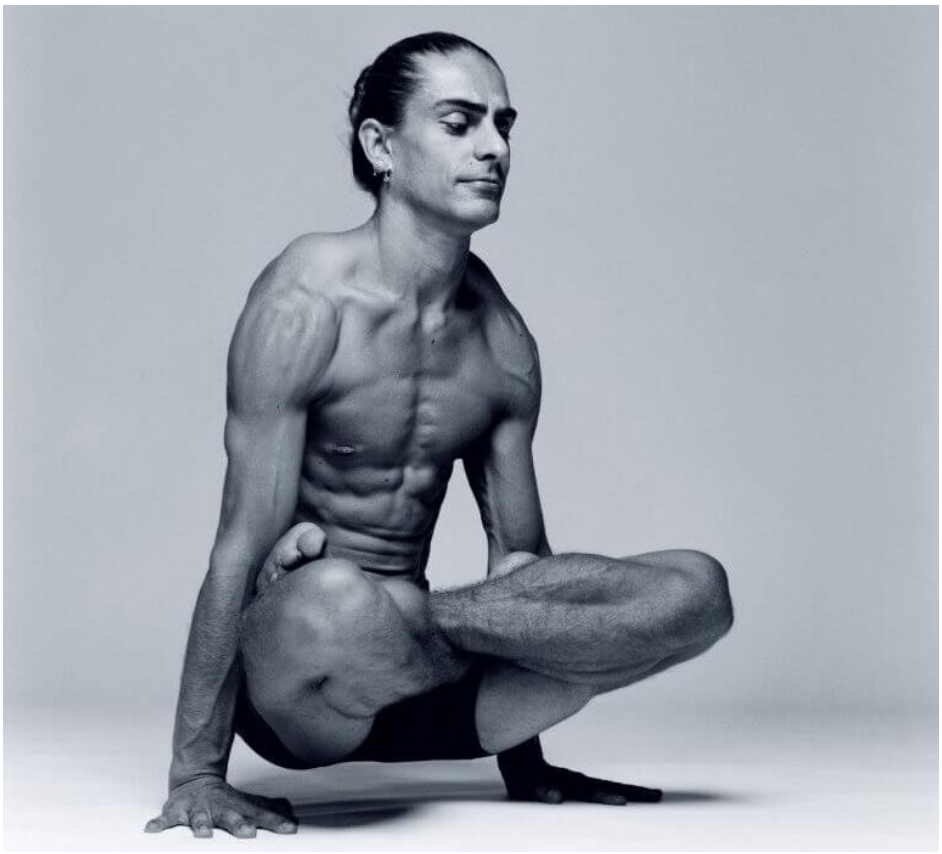
straighten the back, chest, and waist; this is Padmasana, during which rechaka and puraka should be done deeply and slowly as many times as possible. The next vinyasas are as those in earlier asanas.

BENEFITS OF BADDHA PADMASANA & PADMASANA

When in the 9th vinyasa of Baddha Padmasana, or Yoga Mudra, one should meditate upon one's chosen deity (ishta devata), while directing the gaze between the eyebrows and doing rechaka and puraka as much as possible. This is important. Through Baddha Padmasana's practice, the liver and spleen are purified, the spinal column straightened, and the anal canal remedied. Thus, easy to do and very useful, its practice is desirable for everyone, from young to old. The greatness of Baddha Padmasana has been affirmed by the Upanishads.

The sages and seers of works such as the Yoga Yagnavalkya and Yoga Vashishta have said that the practice of Padmasana destroys not only diseases of the body, but great sins, as well. According to them, this is definite. Therefore, as Padmasana is the best and greatest of the asanas, and easy to practice in all respects, it should be performed by everyone.

39. Uth Pluthi



While not an actual asana, Uth Pluthi is nevertheless highly beneficial.

METHOD

At the conclusion of Padmasana and without releasing the legs, press the hands firmly on the floor on either sides of the thighs and, on the force of the hands alone, lift the body up off the floor and hold, remaining in this position and doing rechaka and puraka fully as much as possible. The arms, spine, and neck should be kept completely straight, the chin tilted down a little, and the gaze should be directed on the tip of the nose. Then, jump back into the 4th vinyasa of the first Surya Namaskara and follow the vinyasas described in earlier asanas. Finally, jump through the arms, lie down, and rest for five minutes.

This concludes the practice.

BENEFITS

Uth Pluthi is useful for strengthening the waist and perfecting abdominal and anal control. The three granthis, located in the sacrum, gradually open completely.

THE ASANAS DETAILED TO THIS POINT, WHICH ARE CURATIVE IN NATURE, HAVE now been described as completely as possible. They commonly belong to that part of the yoga method called roga [disease] chikitsa, which is useful for the cure of diseases. Of the asanas of the second series, which is not described in this book, some belong to roga chikitsa and others are shodaka, or purificatory. A number of the asanas of the third series, which also is not described here, are also purificatory, while others are capable of destroying terrible diseases, or have the power to maintain the body's firmness. The asanas reviewed in this book, such as Sarvangasana, Halasana, Karnapidasana, Urdhva Padmasana, Pindasana, Matsyasana, Uttana Padasana, Shirshasana, and Padmasana, should only be practiced after the other asanas have been completed. After these nine asanas, no further asanas should be done. (Those who do only a limited number of asanas daily should be sure to include these nine in their regimen.) If aspirants heed this advice and carefully practice the asanas described above, then they will have the means to prosperity, both material and spiritual.

Surya Namaskara

THE PRACTICE OF THE SURYA NAMASKARA, OR SUN SALUTATIONS, HAS COME down to us from the long distant past, and is capable of rendering human life heavenly and blissful. By means of it, people can become joyous, experience happiness and contentment, and avoid succumbing to old age and death. Yet, nowadays, without ever having learned the traditions and practices of their ancestors and having no control over their sense organs, people engage in self-indulgence and destroy their mental powers for the sake of tangible gain. They deny reality simply because it cannot be seen and make their lives miserable, or subject to disease, poverty, and death. If they were to follow the traditions of their ancestors, however, they would develop their bodies and minds, and, in so doing, make possible the realization of the nature of the Self, as a scriptural authority confirms: "Nayam atma balahinena labhyah [This Self cannot be gained by one devoid of strength]."11 With strengthened bodies, sense organs, and minds, they would become healthy and righteous, live long and intellectual lives, and be able to attain

eternal liberation. Thus, if we want lives of health, righteousness, intellectuality, and longevity, let us never forget the ways and traditions of our ancestors.

By following the precept of the great sages, “Shariramadyam khalu dharma Sadhanam [The first duty is to take care of the body, which is the means to the pursuit of spiritual life],” our ancestors found the means to bodily health.12 Such means, they knew, should not violate the scriptures, but be in accordance with them. And this, they knew, could only be possible through the Surya Namaskara and limbs of yoga. So they studied yogic science, brought it into practice, and were joyful. In all corners of India, too, people of every class were bringing the Surya Namaskara described in the yoga shastra into practice. This they did with the feeling that they were performing a righteous action which was a daily duty, for they knew the blessings of the Sun God are essential to good health. If we reflect on the saying “Arogyam bhaskarad icchet [One should desire health from the sun],” it is clear that those blessed by the Sun God live healthy lives. Therefore, for health—the greatest wealth of all—to be attained, the blessings of the Sun God must alone be sought.

Samasthiti

FIRST SURYA NAMASKARA. 1ST VINYASA

To secure these blessings, the Surya Namaskara should be practiced in accordance with scriptural rules. The worship of the Sun must always be in the Namaskara form, since, while there are other forms of worship, the Namaskara alone are important. In the words of the scripture: “Namaskarapriya suryah [Namaskara is the beloved of the sun].” Thus, they should not be practiced whimsically, but in accordance with the method prescribed in the shastra. For it is only by the Namaskara, done in consonance with the rules and without violating the scripture, that the Sun, the God associated with health, will be pleased and confer the wealth of vitality upon us, and protect us as well. In short, if a person is to secure the fortune of health, he should perform the Surya Namaskara without abandoning the path prescribed in the shastras.

What are the shastras? They explain the meaning of mantras in such a way that even dull minds can easily understand them. Among the shastra s, those that elucidate the import of mantras related to the Sun God offer adorations and prayers to Him as follows: “Bhadram karnebhih shrunuyama devah / Bhadram pashyema / Akshabhir yajatrah [O Gods, while engaged in sacrifices, may we hear with our ears what is auspicious, may we see with our eyes what is auspicious].” The purport of this mantra is to discern divinity in all the objects of the senses through the strengthening of the senses. It is a prayer not merely for the strength of the body, senses, and the mind, and for the elimination of diseases, but for inner happiness and ultimate liberation from transmigratory existence. If such happiness is to be gained, it can only be so by the healthy, not by the sick. Therefore, to become healthy, one should practice the Surya Namaskara in accordance with scriptural injunctions.

The method for doing the Surya Namaskara has been described in various ways by various people. We cannot categorically state which is correct, but when we reflect on the science of yoga, we see that the tradition of the Surya Namaskara follows, in the main, the method of vinyasa, or breathing and movement system, the movements of rechaka, or exhalation, puraka, or inhalation, and meditation. According to the yoga shastra, this tradition includes: vinyasa; rechaka and puraka; dhyana [meditation]; drishti [sight, or gazing place]; and the bandhas [muscle contractions, or locks]. And this alone is the method which should be followed when learning the Surya Namaskara, as yogis declare from experience. Indeed, the Sun Salutations done without following the rules mentioned above are little more than exercise, and not true Surya Namaskara.

There are two types of Surya Namaskara. The first consists of nine vinyasas, and the second, of seventeen. To learn the method for the vinyasas, rechaka and puraka, the bandhas, dhyana, and for trataka [gazing] and the like, one should be certain to consult a Satguru, for it would be wrong to try to learn yoga without recourse to such a teacher. If, however, one follows the scriptural path, and brings it into practice under the guidance of a Satguru who is not only well-versed in the yoga shastra but who has brought it into practice himself, then the three-fold diseases will be destroyed, and one will live a healthy life.

There is a common perception that no medicine exists for mental ill-ness. The Shrutis, however, say that through the Surya Namaskara, even mental illness can be cured. Now, if we reflect on the meaning of a mantra such as: “Hridrogyam mama surya harimanam cha nashaya [Remove, O Sun, the pallor unhealthy to my heart and mind],” we see that even mental illnesses and diseases born of prarabdha karma [the results of past actions that are bearing fruit in this lifetime] can be destroyed. Our ancestors certainly studied the mantras, understood their meanings, and put them into practice. As a result, they lived long lives of good health, great strength, and high intellect, and, without ever succumbing to disease, death, or poverty, they attained divine knowledge, merged with bliss, and were forever content.

Thus, if the scriptural way of practicing the Surya Namaskara is followed, the most terrible diseases, such as leprosy, epilepsy, and jaundice, will be cured. In this regard, no one need entertain any doubt or disbelief; without question, the terrible diseases just referred to can be destroyed. Some people have received medical treatment for illnesses such as leprosy for years without ever being cured. Within five to six months, however, of practicing the Surya Namaskara, yogasana, pranayama , and the like, they have found themselves relieved of their ailments. This is borne out by my own experience. Therefore, people who practice yoga and the Surya Namaskara will not fall victim to maladies of any type. Hence, aspirants should engage in their practice and leave behind all fear and doubt.

Some people work by sitting or standing in one place for long periods of time and experience pains in their joints which make them unable to sit or walk without great difficulty. They pursue all kinds of medical treatment, and lead futile lives. But their afflictions can definitely be cured by the Surya Namaskara. Yogis speak of such afflictions as being associated with the nadis. To keep the body, which is the foundation of the performance of all sorts of meritorious deeds, pure and free from obstacles such

as disease as much as possible, the Surya Namaskara and yogasana are very important. Indeed, in the present world, they are essential to all, men and women, young and old. Were all people to recognize their usefulness, bring them into practice, and teach their traditions to their families, it can be said with pride that our holy land of India would rejoice to find itself filled with fresh energy. Were the government itself to understand their usefulness, and make the practice of yogasana, the Surya Namaskara, and their traditions compulsory for all students in all educational institutions, boys and girls alike, which would help to render their lives pure, it would be doing a great service to the world. Indeed, Mother India would be very pleased. We should, therefore, never forget to carry the torch of this divine light of yogic knowledge, which has been passed down to us with our Vedic culture, and to keep its flame alight for all eternity.

METHOD FOR DOING THE FIRST SURYA NAMASKARA

The first type of Surya Namaskara has nine vinyasas. To begin, join the legs together, with the heels and big toes touching, push the chest up, lower the head slightly, and stand straight, gazing at the tip of the nose; this is called Samasthiti, which means standing up in a straight line. Then, taking the breath in slowly through the nose, raise the arms straight up over the head, bring the hands together, lean the head back a little, and look at the fingertips; this is the 1st vinyasa. Then, releasing the breath slowly, bring the hands down to the floor on either side of the feet, straighten the knees, and touch the knees slowly with the nose; this is the 2nd vinyasa. Then, doing puraka (which means inhaling), lift only the head; this is the 3rd vinyasa. For all subsequent vinyasas. Next, doing rechaka (which means exhaling), press the hands squarely onto the floor and, with only the strength of the hands, throw the legs back and hold the body straight on the hands and toes only; this is the 4th vinyasa. Then, doing puraka, push the chest forward with the strength of the hands, lift the head up, bend the waist, straighten the arms without touching either the thighs or knees to the floor, and extend the feet, toes pointed and tops pressed to the floor; this is the 5th vinyasa. For all the vinyasas, the body should be kept tight and straight. Then, doing rechaka, lift the waist up, tilt the head under, press the heels to the floor, pull in the stomach completely, and hold position, gazing at the navel; this is the 6th vinyasa.

Following this, the 7th vinyasa conforms to the method of the 3rd vinyasa, meaning that while moving from the 6th vinyasa to the 7th vinyasa, do puraka, jump the feet in between the hands, press the legs together, and stand with the knees straightened and feet joined. The 8th vinyasa then follows the method of the 2nd vinyasa, and the 9th vinyasa follows the method of the 1st vinyasa. One should then be standing up straight in Samasthiti.

This is the method for the first Surya Namaskara, which is often practiced while chanting mantras. For this, meditation is very important, as are the drishti, or gazing places, which include: nasagra drishti [the gaze on the tip of the nose] for samasthiti; broomadhya drishti [the gaze between the eyebrows] for the 1st vinyasa; nasagra dristri for the 2nd vinyasa; the gaze between the eyebrows for the 3rd vinyasa—in other words, for the odd-numbered vinyasas, the gaze should be focused between the eyebrows and, for the even-numbered ones, the gaze should be on the tip of the nose. In addition, for the even-numbered vinyasas, rechaka should be performed and, for the odd, one should do puraka. On the

whole, the method for doing rechaka and puraka is the same for all the vinyasas and asanas ahead. A sadhaka [spiritual aspirant] should learn it with patience.

METHOD FOR DOING THE SECOND SURYA NAMASKARA

The second type of Surya Namaskara has seventeen vinyasas and its movements of rechaka and puraka are the same as for the first Surya Namaskara. To begin, stand straight, joining the legs together, as in the first Surya Namaskara. Then, doing puraka, bend the knees, which should be together, lift the chest, raise the arms straight up over the head, join the hands together, lean the head back a little, and stand gazing at the tips of the fingers; this is the 1st vinyasa. Next, doing rechaka, straighten the legs (do not bend the knees), press the hands down onto the floor on either side of the feet, as described in the first Surya Namaskara, and touch the knees with the nose; this is the 2nd vinyasa. Then, doing puraka, straighten the back, lift the head only; this is the 3rd vinyasa. Next, doing rechaka slowly, jump the body back into the form of a stick with only the strength of the hands, as described in the first Surya Namaskara, and rest with the head lifted a little; this is the 4th vinyasa. Then, doing puraka, push the body forward with the force of the arms, lift the chest, arch the back, and make the legs tight and straight, resting with the tops of the feet pressed to the floor; this is the 5th vinyasa. Then, doing rechaka, lift the waist up, press the heels to the floor, tilt the head, draw in the stomach tightly, and stare at the navel; this is the 6th vinyasa. Next, doing puraka, place the right foot between the hands, which are pressed to the floor, bend the knee of the right leg, straighten the thigh and knee of the left leg which is stretched back, raise the arms straight up over the head, bring the hands together, swell the chest, lean the head back a little, and rest, staring at the tips of the fingers; this is the 7th vinyasa.

The 8th vinyasa then follows the method of the 4th vinyasa. The 9th vinyasa follows the method of the 5th vinyasa. The 10th vinyasa follows the method of the 6th. The 11th vinyasa follows the method of the 7th, though for the 7th vinyasa, the right leg comes forward and, in the 11th vinyasa, the left leg comes forward; this should be noted. Then, the 12th vinyasa again follows the method of the 4th. The 13th vinyasa follows the method of the 5th. The 14th vinyasa follows the method of the 6th. The 15th vinyasa follows the method of the 3rd. The 16th vinyasa follows the method of the 2nd, and the 17th vinyasa follows the method of the 1st. Then, comes Samasthiti.

For the second Surya Namaskara, the vinyasas, rechaka, and puraka follow the method described in the first Surya Namaskara. The only difference is that, in the second Surya Namaskara, the 1st, 7th, 11th, and 17th vinyasas introduce a different form; otherwise, the remaining vinyasas are the same as those for the first Sun Salutation. As earlier noted, even-numbered vinyasas indicate rechaka, and those with odd numbers signal puraka.

Aspirants should know this method, which is best learned from a Guru. They should also note that kumbhaka, or breath retention, does not occur either in the Surya Namaskara or the asanas. Those who practice the Surya Namaskara in accordance with scriptural rules must never forget to be mindful of the drishti, bandhas, dhyana, rechaka, and puraka, as discussed earlier. After finishing the Sun Salutations, worship and other religious activities should be performed while sitting in Padmasana. For those who

practice asanas, the Surya Namaskara must be performed first and then followed by the asanas. This is the rule. Those who follow this rule will receive whatever they desire.

With this, the topic of the Surya Namaskara comes to a close.

Pranayama (Breathing Practices)

Introduction to Pranayama

Pranayama (prana = energy + yama = control) is a type of meditation technique that involves various ways of controlling the breathing, with the goal being to withdraw ones senses from the outside world. This helps one to raise one's prana (or Kundalini energy in this case) up the deep spine to the spiritual eye or sixth chakra, which brings one to enlightenment. Kriya Yoga is one such technique, made well known by Paramhamsa Yogananda in Autobiography of a Yogi.

It is also the fourth limb of spiritual advancement as laid out in Patanjali's Yoga Sutras.

<u>According to Patanjali, while practicing pranayama techniques:</u>

The emphasis while breathing (and therefore in the flow of the life-force) may be more on inhalation, on exhalation, or on stillness. It may be on space entering the body (rather than on the body's breathing); on the timing of the inhalation and exhalation (whether rapid or slow), and on the number of counts in each inflow and outflow — whether the flow be short or long.

Benefits of Pranayama

On either side of the spine there is an energetic nerve channel, or nadi : ida on the left and pingala on the right.

The prana or energy travels upward through the ida nadi. With this upward movement, the breath is automatically drawn into the lungs. As a result, the mind is drawn outward to the world of the senses.

The energy then travels downwards through the pingala nadi. When the energy is going down, it is called apana rather than prana. This downward movement is accompanied by physical exhalation, and signifies a rejection of external circumstances.

One manifestation of this cycle is the association of inhalation with excitement and happiness, and exhalation with defeat and depression. Happiness and sadness must always follow each other when the cause of each is external circumstances, which are always changing.

However, through pranayama techniques a person can instead redirect the energy through the deep spine in between the ida and pingala, called the sushumna. When the level of energy in the sushumna reaches the top of the spine and goes into the spiritual eye, or sixth chakra, one becomes enlightened.

Clavicular Breathing

This type of breathing is generally done with a combination with thoracic breathing in periods of great stress such as strong physical exertion or obstructive airways problems such as astha or eemphhysema. The upper ribs and collar bones are pulled upward by the sternum and neck and this allows more air into the lungs. In yoga we only use it alone to create awareness and then afterwards combine it with thoracic and abdominal breathing to form yogic breathing.

To practice clavicular breathing one starts with reath awareness and then thoracic breathing for a few minutes. Ahter that breathe in fully, into the chest, from there try to breathe in a little more so that one can feel the expansion right in the the upper lungs. The collar bones and shoulders will raise up slightly. Next exhale, first relaxing the next and upper chest and then the ribcage, continue a few rounds.

Thoracic Breathing

This type of breeathing is mostly helpful to breate awareness in how we breathe and as a stepping stone to learning yogic breathing. It is a common way to how many of us breathe which expands more energy ithan the abdominal breathing.

To practice thoracic breathing one starts with breath awareness and tries to focus on expanding the ribcage only, without using the diaphragm. The focus should only be on the expansion of the chest as one inhales and the contracion of the chest as one exhales.

Abdominal Breathing

This should be praciced before any pranayama for atleast a few minutes. And we should always breathe with our diaphragm for all breathing techniques. Sit in a comfortable sitting position, using the wall, a chair, cusions or bolsters as support if needed. Alternatively, lie in shavasana or tadasana. Tadasana is useful during pregnancy as it allows the lower back to relax. However in the last stage of pregnancy, sitting is preferred.

Place one hand on the belly and the other on the chest. Inhale deeply using the diaphragm. If one is using the diaphragm then as onee inhales the diaphragm will move downwards, pushing the abdominal contents down and out, and making the abdomen rise. On exhalation the diaphragm will move upwards and the abdomen will fall. Continue the practice. If the chest is moving then we are still breathing shallow, without the diaphragm. If we use the diaphragm then the lower lobes of the lungs used, impriving their efficiency and giving a positive effect to the heart, liver, stomach and intestines.

It is the most natural and effective way of breathing. However, not many people breathe like that in the modern world. Just by altering the breath we can start seeing huge benefits in our everyday lives.

Yogic Breathing

This involves the use of the abdomen, chest and clavicular region. It can also be practiced before other brathing techniques. It allows one to have maximum inhalation and exhalation. It can be combined with deep breathing (using a ratio).

Simply inhale slowly allowing the abdomen to rise. When the abdomen has expanded as much as it can alow the chest to expand outward and upward. Once the ribs have expanded as much as they can inhale a little more so that the collar bones move up slightl. Then slowly exhale first allowing the collar bones to move downwards then the chest and then finally the abdomen. Continue to practice without any strain, jerks or tension. The breath should feel natural and after some time it should be mostly thoracic and abdominal breathing. Abdominal breathing should be atleast 70% of the breath.

Ujjayi Breathing (The Psychic Breath)

Sit in any comfortable position, preferably a meditation asana. Close the eyes and relax the whole body. Take the awareness to the breath in the nostrils and allow the breathing to become calm and rhythmic. After some time, transfer the awareness to the throat. Try to feel or to imagine that the breath is being drawn in and out through the throat and not through the nostrils; as if inhalation and exhalation are taking place through a small hole in the throat. As the breathing becomes slower and deeper, gently contract the glottis so that a soft snoring sound like the breathing of a sleeping baby is produced in the throat. If this is practiced correctly there will be a simultaneous contraction of the abdomen. This happens by itself, without any effort being made. Both inhalation and exhalation should be long, deep and controlled. Practice yogic breathing while concentrating on the sound produced by the breath in the throat. The sound of the breath should not be very loud. It should just be audible to the practitioner but not to another person unless they are sitting very close.

When this breathing has been mastered, fold the tongue back into khechari mudra (refer to the section Mudra). If the tongue becomes tired, release it, while continuing the ujjayi breathing. When the tongue is rested, again fold it back.

Duration: Practice for 10 to 20 minutes.

Contra-indications: People who are too introverted by nature should not perform this practice. Those suffering from heart disease should not combine bandhas or breath retention with ujjayi.

Benefits: Ujjayi is classified as a tranquillising pranayama and it also has a heating effect on the body. This practice is used in yoga therapy to soothe the nervous system and calm the mind. It has a profoundly relaxing effect at the psychic level. It helps to relieve insomnia and may be

practiced in shavasana just before sleep. The basic form without breath retention or bandhas slows down the heart rate and is useful for people suffering from high blood pressure. Ujjayi alleviates fluid

retention. It removes disorders of the dhatu, which are the 7 constituents of the body: blood, bone, marrow, fat, semen, skin and flesh.

Advanced practice: After becoming proficient in the practice, ujjayi may be performed with jalandhara bandha and moola bandha in conjunction with internal and external kumbhaka (for details of these practices refer to the section Bandha). Do not strain when performing kumbhaka, one or two seconds is sufficient at first. The duration may be increased gradually as the technique is mastered.

Practice note: Ujjayi may be performed in any position, standing, sitting or lying. Those suffering from slipped disc or vertebral spondylitis may practice ujjayi in vajrasana or makarasana.

Many people contort their facial muscles when they do ujjayi. This is unnecessary. Try to relax the face as much as possible. Do not contract the throat too strongly. The contraction should be slight and applied continuously throughout the practice.

The Sanskrit word ujjayi means 'victorious'. It is derived from the root ji, which means 'to conquer' or 'to acquire by conquest', and the prefix ud, which means 'bondage'. Ujjayi is therefore the pranayama which gives freedom from bondage. It is also known as the psychic breath, as it leads to subtle states of mind and is used together with khechari mudra, the tongue lock, in tantric meditation techniques such as mantra japa, ajapa japa, kriya yoga and prana vidya.

Bhastrika Pranayama (Bellow's breath)

Preparatory practice: Sit in any comfortable meditation posture, preferably padmasana, ardha padmasana or siddha/siddha yoni asana, with the hands resting on the knees in either chin or jnana mudra. Keep the head and spine straight, close the eyes and relax the whole body. Take a deep breath in and breathe out forcefully through the nose. Do not strain. Immediately afterwards breathe in with the same force. During inhalation the diaphragm descends and the abdomen moves outward. During exhalation the diaphragm moves upward and the abdomen moves inward. The above movements should be slightly exaggerated. Continue in this manner, counting 10 breaths. At the end of 10 breaths, take a deep breath in and breathe out slowly. This is one round. Practice up to 5 rounds.

Keep the eyes closed and concentrate on the breathing and the counting.

Practice note: When accustomed to this style of breathing, gradually increase the speed, always keeping the breath rhythmical. Inhalation and exhalation must be equal.

Breathing: Bhastrika may be practiced at three different breath rates: slow, medium and fast, depending on the capacity of the practitioner. Slow bhastrika is practiced to approximately one breath every two seconds, with no undue force on inhalation or exhalation. It is like amplified normal breathing. It is especially useful for beginners and those using bhastrika for therapeutic purposes, although it may also be practiced at all stages. Medium bhastrika increases the speed of respiration to approximately one breath every second.

Fast bhastrika means a breathing speed of around two breaths per second. Both medium and fast breathing are suitable for intermediate and advanced practitioners. The abdominal muscles will become stronger with regular practice. As they do so, the number of respirations may be increased by 5 per month from the initial count of 10 to a maximum count of 40 to 50 respirations through the left, the right and both nostrils.

Duration: Up to 5 rounds. Slowly increase the duration of retention up to 30 seconds after breathing through the left, the right and both nostrils. Do not strain.

Awareness: Physical - on the breathing process, the physical movement of the abdomen and mental counting.

Spiritual: on manipura chakra.

Precautions: A feeling of faintness, excessive perspiration or a vomiting sensation indicates that the practice is being performed incorrectly. Avoid violent respiration, facial contortions and excessive shaking of the body. If any of these symptoms are experienced, the advice of a yoga teacher should be sought. This practice is ideal for purifying the blood and eradicating a bad complexion. However, if the stages are rushed, all the impurities will be ejected from the body in a rush which may exacerbate the condition. A slow, conscientious approach to this practice is, therefore, recommended.

Bhastrika is a dynamic practice requiring a large expenditure of physical energy. Beginners are advised to take a short rest after each round.

Contra-indications: Bhastrika should not be practiced by people who suffer from high blood pressure, heart disease, hernia, gastric ulcer, stroke, epilepsy or vertigo. Those suffering from lung diseases such as asthma and chronic bronchitis, or who are recovering from tuberculosis, are recommended to practice only under expert guidance.

Benefits: This practice burns up toxins and removes diseases of the doshas or humours: kapha, phlegm; pitta, bile; and vata, wind. Because of the rapid exchange of air in the lungs, there is an increase in the exchange of oxygen and carbon dioxide into and out of the bloodstream. This stimulates the metabolic rate, producing heat and flushing out wastes and toxins. The rapid and rhythmic movement of the diaphragm also massages and stimulates the visceral organs, toning the digestive system. It is a useful practice for women during labour after a few months of proper preparation. Bhastrika reduces the level of carbon dioxide in the lungs. It is an excellent practice for asthmatics and those suffering from other lung disorders. It alleviates inflammation in the throat and any accumulation of phlegm. It balances and strengthens the nervous system, inducing peace, tranquillity and onepointedness of mind in preparation for meditation.

Note: *The Sanskrit word bhastrika means 'bellows'. Thus, bhastrika pranayama is also known as the bellows breath, as air is drawn forcefully in and out of the lungs like the bellows of a village blacksmith. The bellows increases the flow of air into the fire, producing more heat. Similarly, bhastrika pranayama*

increases the flow of air into the body to produce inner heat at both the physical and subtle levels, stoking the inner fire ofmind/body.

Kapalbhati (Frontal Brain Cleansing Technique)

Sit in any comfortable meditation asana; padmasana, as a first choice, or siddha/siddha yoni asana, with the head and spine straight and the hands resting on the knees in either chin or jnana mudra. Close the eyes and relax the whole body. Inhale deeply through both nostrils, expanding the abdomen, and exhale with a forceful contraction of the abdominal muscles. Do not strain. The next inhalation takes place by passively allowing the abdominal muscles to expand. Inhalation should be a spontaneous or passive recoil, involving no effort.

Perform 10 respirations to begin with. Count each respiration mentally. After completing 10 rapid breaths in succession, inhale and exhale deeply. This is one round. Practice 3 to 5 rounds. After completing the practice, maintain awareness of the void in the region of the eyebrow centre, feeling an allpervading emptiness and calm.

Breathing: It is important that the rapid breathing used in these techniques be from the abdomen and not from the chest. The number of respirations may be increased from the initial count of 10 up to 20, as the abdominal muscles become stronger.

Duration: Up to 5 rounds of 10 to 20 breaths.

Awareness: Physical - on rhythmic breathing, keeping count of the respirations.

Spiritual: On chidakasha or the void at the eyebrow centre.

Sequence: Kapalbhati should be practiced after asanas or neti and immediately before pratyahara and dharana meditation techniques. It may be performed at any time of day but should only be practiced on an empty stomach, 3 to 4 hours after meals.

Precautions: If pain or dizziness is experienced, stop the practice and sit quietly for some time. When the sensation has passed, recommence the practice with more awareness and less force. If the problem continues, consult a yoga teacher.

Contra-indications: Kapalbhati should not be practiced by those suffering from heart disease, high blood pressure, vertigo, epilepsy, stroke, hernia or gastric ulcer.

Benefits: Kapalbhati purifies ida and pingala nadis, and also removes sensory distractions from the mind. It is used to energise the mind for mental work, to remove sleepiness and to prepare the mind for meditation. It has a similar cleansing effect on the lungs to bhastrika and is, therefore, a good practice for asthmatics and those suffering from emphysema, bronchitis and tuberculosis.

After a few months of proper preparation, it can be effective for women to use during childbirth. It balances and strengthens the nervous system and tones the digestive organs. For spiritual aspirants, this practice arrests thoughts and visions.

Practice note: Although kapalbhati is similar to bhastrika, there are important differences. Bhastrika uses force on both inhalation and exhalation, expanding and contracting the lungs above and below their resting or basic volume.

Kapalbhati, on the other hand, actively reduces the volume of air in the lungs below this level through forced exhalation. In this practice, inhalation remains a passive process which brings the level of air in the lungs back to the basic volume only. This way of breathing reverses the normal breathing process which involves active inhalation and passive exhalation.

Note: *Kapalbhati is also one of the six shatkarmas. The Sanskrit word kapal means 'cranium' or 'forehead' and bhati means 'light' or 'splendour' and also 'perception or 'knowledge'. Hence kapalbhati is the practice which brings a state of light or clarity to the frontal region of the brain. Another name for this practice is kapalshodhana, the word shodhana meaning 'to purify'.*

Nadi – Sodhana/Anuloma -Viloma (Alternate Nostril Breathing)

In this technique the duration of inhalation/exhalation is controlled. Close the right nostril with the thumb and breathe in through the left nostril. At the same time count mentally, "1 , Om; 2, Om; 3, Om", until the inhalation ends comfortably. This is the basic count. Breathe deeply with yogic breathing. Do not strain. Close the left nostril with the ring finger, release the pressure of the thumb on the right nostril and while breathing out through the right nostril, simultaneously count, "1 , Om; 2, Om; 3, Om". The time for inhalation and exhalation should be equal.

Next, inhale through the right nostril, keeping the same count in the same manner. At the end of inhalation close the right nostril, open the left nostril and exhale through the left nostril, counting as before. This is one round.

Practice 10 rounds.

Ratio and timing: After a few days, if there is no difficulty, increase the length of inhalation/exhalation by one count. Continue in this way, increasing the inhalation/exhalation by one count as it becomes easy, until the count of 12:12 is reached. Do not force the breath in any way and be careful not to speed up the counting during exhalation to compensate for shortage of breath. At the slightest sign of discomfort reduce the count.

After perfecting the above ratio, it may be changed to 1:2. For example, breathe in for a count of 5 and breathe out for a count of 10. Continue extending the breath by adding one count to the inhalation and two to the exhalation, up to the count of 12:24. This ratio establishes a calming rhythm for the brain and heart, assisting the treatment of cardiovascular and nervous system disorders specifically, and

stress related conditions generally. When this technique can be performed with complete ease move on to technique 3.

Technique 3: with Antar Kumbhaka (inner retention) In this technique antar kumbhaka or internal breath retention is introduced. Close the right nostril and breathe in slowly through the left nostril for a count of 5. At the end of inhalation, close both nostrils and retain the air in the lungs for a count of 5. The glottis may be slightly contracted to hold the air within the lungs. Open the right nostril, breathe in slightly through the right nostril and then slowly breathe out through the same nostril for a count of 5. This slight inhalation at the end of inner retention helps to bring the respiratory muscles back into action again and relieves the locked condition of the glottis. The exhalation should be smooth and controlled and of the same length as the inhalation. At the end of exhalation, immediately inhale through the right nostril for a count of 5, keeping the left nostril closed. Again, retain the breath for a count of 5 with both nostrils closed. Open the left nostril, breathe in slightly through the left nostril and then breathe out through the same nostril for a count of 5. This is one round. Maintain constant awareness of the count and of the breath. Practice 10 rounds.

Ratio and timing: The maintenance of a strict ratio during inhalation, kumbhaka and exhalation is of the utmost importance. The ratio will change as the ability to hold the breath for longer periods of time progressively develops. After mastering the ratio of 1:1:1, increase the ratio to 1:1:2. For example, inhale for a count of 5, perform internal kumbhaka for a count of 5 and exhale for a count of 10. After some weeks of practice, when this ratio has been mastered, increase the ratio to 1:2:2. Inhale for a count of 5, do internal kumbhaka for a count of 10 and exhale for a count of 10.

After mastering the ratio of 1:2:2, gradually increase the count by adding one unit to the inhalation (e.g. 5 becomes 6), 2 units to the retention and 2 units to the exhalation (making each of them 12). The count of one round will then be 6:12:12. When this has been perfected and there is absolutely no discomfort, increase the count to 7:14:14.

Gradually increase the count over a period of one or two years to 24:48:48. Thereafter, gradually increase the ratio to 1:3:2, and 1:4:2. Once this has been established, move on to technique 4.

Technique 4: With Antar and Bahir Kumbhaka (internal and external retention) In this technique bahir kumbhaka or outer breath retention is introduced.

Do not try to hold the breath outside for too long at first, even though it may seem easy. Inhale through the left nostril. Retain the breath inside in antar kumbhaka as described in technique 3. Exhale through the right nostril. After exhalation, when the lungs are deflated as much as possible, close both nostrils and hold the breath out for the chosen count. The glottis may be slightly contracted to hold the air out of the lungs. Exhale slightly through the right nostril immediately before inhaling. This will release the lock on the lungs and the glottis and bring the respiratory system smoothly back into operation. Inhale slowly through the right nostril. Retain the breath inside in antar kumbhaka. Exhale through the left nostril. Again, hold the breath out in bahir kumbhaka to the count, with both nostrils closed. This is one

round. Remember to exhale slightly through the right nostril before breathing in at the start of the next round. Practice 5 rounds.

Ratio and timing: The ratio should start off as 1:4:2:2 for inhalation, internal retention, exhalation, external retention. The duration of inhalation should slowly be increased from 5 to 6 counts, then from 6 to 7 and so on, and the duration of exhalation and retention should be adjusted accordingly.Do not increase the count for inhalation until the relative counts for exhalation and breath retention are comfortable.

Breathing: Breathing should be silent in all techniques of nadi shodhana, ensuring that it is not forced or restricted in any way. As the ratio and duration increases the breath becomes very light and subtle. Increased ratios and breath duration should not be attained at the expense of relaxation, rhythm and awareness. The flow of breath must be smooth, with no jerks, throughout the practice. Always use the chest and diaphragm muscles and practice yogic breathing. If one of the nostrils is blocked, perform jala neti or breath balancing exercises before commencing.

Awareness: Physical - on the breath and the counting.

Mental - It is easy for the mind to wander during nadi shodhana. Simply be aware of this wandering tendency of the mind, continue the practice and the count. This will automatically encourage the awareness to return to the practice.

Spiritual: On Ajna chakra.

Precautions: Depending on the phase of the moon, one of the two nostrils usually becomes strongly dominant during the time of sunrise and sunset. This is a period of intense swara, 'breath', activity and it is not advisable to alter the flows at this time. Under no circumstance should the breath be forced. Never breathe through the mouth. Proceed carefully and only under expert guidance. At the slightest sign of discomfort, reduce the duration of inhalation/exhalation/retention and, if necessary, discontinue the practice for the day. Nadi shodhana should never be rushed.

Sequence: Nadi shodhana should be practiced after asanas and heating or cooling pranayamas, and before bhramari and ujjayi pranayamas. The best time to practice is from 4 to 6 am; however, it may be performed any time during the day except after meals.

Duration: 5 to 10 rounds or 10 to 15 minutes daily.

Benefits: Nadi shodhana ensures that the whole body is nourished by an extra supply of oxygen. Carbon dioxide is efficiently expelled and the blood is purified of toxins. The brain centres are stimulated to work nearer to their optimum capacity. It also induces tranquillity, clarity of thought and concentration, and is recommended for those engaged in mental work. It increases vitality and lowers levels of stress and anxiety by harmonising the pranas. It clears pranic blockages and balances ida and pingala nadis, causing sushumna nadi to flow, which leads to deep states of meditation and spiritual awakening.

Practice note: Development of nadi shodhana is intended to take place over a long period of time. Each technique should be practiced for a minimum of 6 months, except for technique 1 which may be practiced for 2 to 4 weeks. Developing the ratios and timing of the breath in each technique may even take years. Techniques 1 and 2 prepare the lungs and the nervous system for techniques 3 and 4 which introduce antar and bahir kumbhaka, internal and external breath retention. Mastery of the later techniques may take some time to realise as the body and mind need to adjust to the effects of extended breath retention. The full benefits of this practice will be obtained by systematically perfecting each level rather than by struggling prematurely with the advanced techniques.

Note: *The word nadi means 'channel' or 'flow' of energy and shodhana means 'purification'. Nadi shodhana, therefore, means that practice which purifies the nadis. The number 24, used for timing the breath, derives from classical texts which use the Gayatri mantra as a metre to measure the length of pranayamas; the Gayatri mantra is made up of 24 individual mantras.*

Introduction to Bandha

Traditionally, bandhas were classified as part of mudras, and were handed down by word of mouth from guru to disciple. The Hatha Yoga Pradipika deals with bandhas and mudras together and the ancient tantric texts also make no distinction between the two. Bandhas are extensively incorporated in mudra as well as pranayama techniques. Their locking action, however, reveals them as a fundamentally important group of practices in their own right. The Sanskrit word bandha means to 'hold', 'tighten' or 'lock'. These definitions precisely describe the physical action involved in the bandha practices and their effect on the pranic body. The bandhas aim to lock the pranas in particular areas and redirect their flow into sushumna nadi for the purpose of spiritual awakening. Bandhas may be practiced individually or incorporated with mudra and pranayama practices. When combined in this way, they awaken the psychic faculties and form an adjunct to higher yogic practices.

Bandhas and the granthis

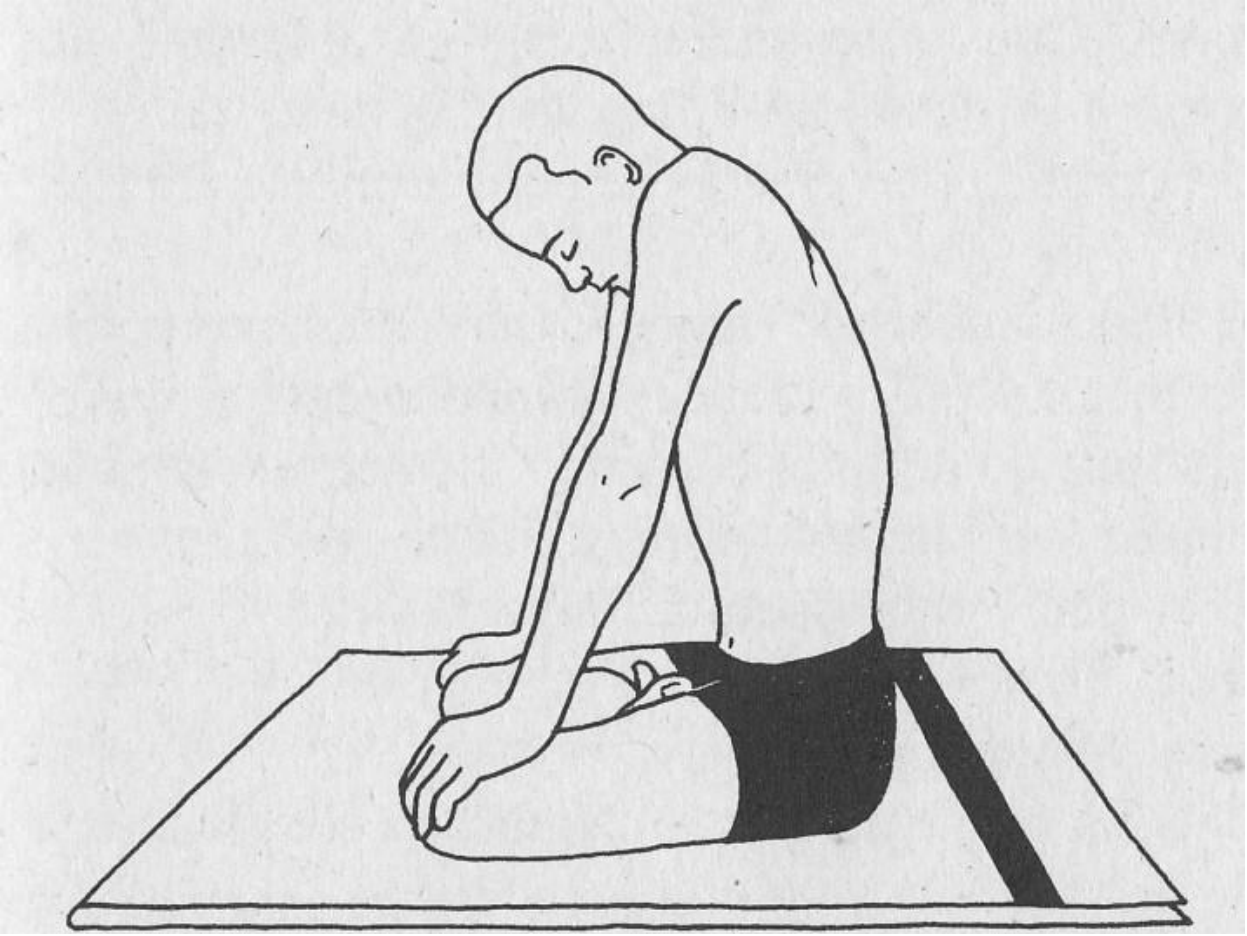
There are four bandhas: jalandhara, moola, uddiyana and maha. The last of these is a combination of the first three. These three bandhas directly act on the three granthis or psychic knots. Moola bandha is associated with brahmagranthi, uddiyana bandha with vishnu granthi and jalandhara bandha with rudra granthi. The granthis prevent the free flow of prana along sushumna nadi and thus impede the awakening of the chakras and the rising of kundalini.

Brahma granthi is the first knot and it is associated with mooladhara and swadhisthana chakras. It is linked with the survival instinct, the urge to procreate and with deep, instinctive knowledge, awareness and desire. When brahma granthi is transcended, the kundalini or primal energy is able to rise beyond mooladhara and swadhisthana without being pulled back down by the attractions and instinctual patterns of the personality.

The second knot is vishnu granthi, associated with manipura and anahata chakras. These two chakras are associated with the sustenance of the physical, emotional and mental aspects of human existence. Manipura sustains annamaya kosha, the physical body, governing the digestion and metabolism of food. Anahata sustains manomaya kosha, the mental body, and pranamaya kosha, the energy body. Once vishnu granthi is transcended, energy is drawn from the universe and not from the localised centres within the human being.

The final knot is rudra granthi which is associated with vishuddhi and ajna chakras. Vishuddhi and ajna sustain vijnanamaya kosha, the intuitive or higher mental body, and represent the transformation of an existing form, idea or concept into its universal aspect. When rudra granthi is pierced, individuality is dropped, the old ego awareness is left behind and the experience of unmanifest consciousness emerges beyond ajna chakra at sahasrara.

Jalandhara Bandha (throat lock)



Sit in padmasana or siddha/siddha yoni asana with the head and spine straight. The knees should be in firm contact with the floor. Those who cannot manage this may perform jalandhara bandha in a standing position. Place the palms of the hands on the knees. Close the eyes and relax the whole body. Inhale slowly and deeply, and retain the breath inside. While retaining the breath, bend the head forward and press the chin tightly against the chest. Straighten the arms and lock them firmly into position, pressing the knees down with the hands. Simultaneously, hunch the shoulders upward and forward. This will ensure that the arms stay locked, thus intensifying the pressure applied to the neck. Stay in the final position for as long as the breath can be held comfortably. Do not strain. Relax the shoulders, bend the arms, slowly release the lock, raise the head and then exhale. Repeat when the respiration has returned to normal.

Variation: In yoga a more subtle form of jalandhara bandha is practiced where the head is simply bent forward so that the chin presses the neck, and the awareness is concentrated on vishuddhi chakra. This kriya variation is the one most commonly used in association with asana practices.

Breathing: The practice may also be performed with external breath retention.

Duration: Jalandhara bandha should be held for as long as the practitioner is able to comfortably retain the breath. Gradually increase this period by maintaining a count while retaining the breath and increasing the count one by one. This practice may be repeated up to 5 times.

Awareness: Physical - on the throat pit. Spiritual - on vishuddhi chakra.

Sequence: This bandha is ideally performed in conjunction with pranayamas and mudras. If practiced on its own it should be performed after asanas and pranayamas and before meditation.

Contra-indications: People suffering from cervical spondylosis, high intracranial pressure, vertigo, high blood pressure or heart disease should not practice jalandhara bandha. Although it reduces blood pressure initially, long retention of the breath brings about some strain on the heart.

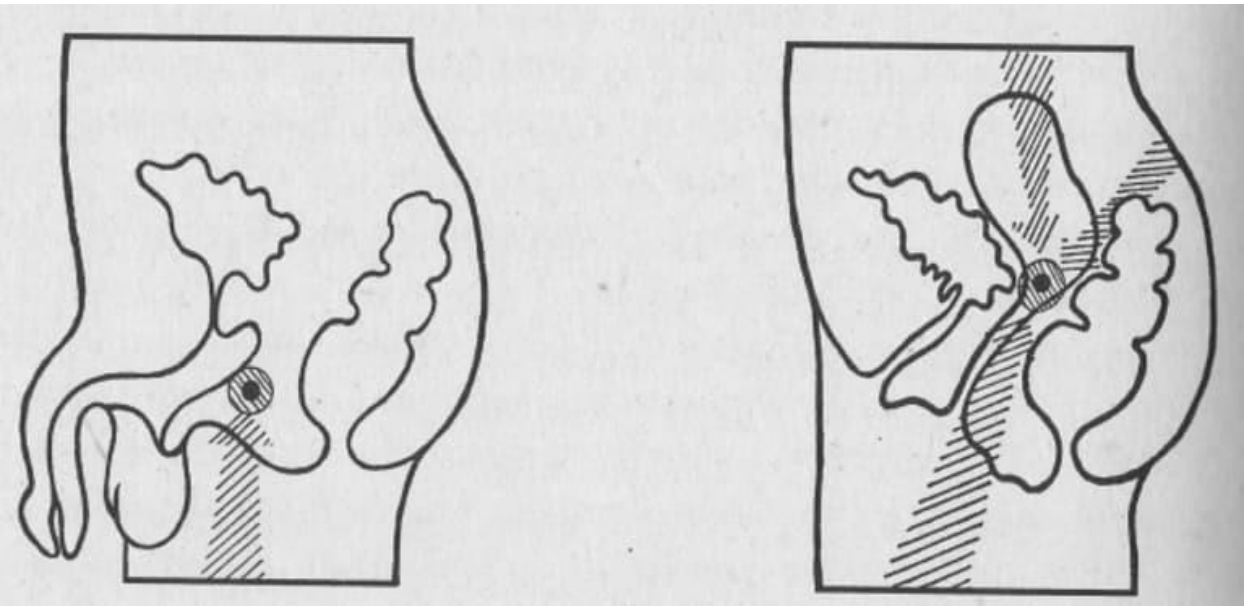
Benefits: Jalandhara bandha compresses the carotid sinuses, which are located on the carotid arteries, the main arteries in the neck. These sinuses help to regulate the circulatory and respiratory systems. Normally, a decrease of oxygen and increase of carbon dioxide in the body leads to an increased heart rate and heavier breathing. This process is initiated by the carotid sinuses. By artificially exerting pressure on these sinuses, this tendency is prevented, allowing for decreased heart rate and increased breath retention.

This practice produces mental relaxation, relieving stress, anxiety and anger. It develops meditative introversion and one-pointedness. The stimulus on the throat helps to balance thyroid function and regulate the metabolism.

Practice note: Do not inhale or exhale until the chin lock and armlock have been released and the head is fully upright. If any sensation of suffocation is felt, immediately stop and rest. Once the sensation has passed, resume the practice.

Note: The Sanskrit word jalan means 'net' and dhara means 'stream' or 'flow'. One interpretation of jalandhara bandha is the lock which controls the network of nadis in the neck. The physical manifestation of these nadis are the blood vessels and nerves of the neck. An alternative definition is that'll means 'throat', jalan, 'water' and that dhara refers to a tubular vessel in the body. Jalandhara bandha is therefore the throat lock which holds the nectar or fluid flowing down to vishuddhi from bindu and prevents it from falling into the digestive fire. In this way prana is conserved. There is also a third meaning. Adhara means 'base' or 'substratum'. There are sixteen specific centres in the body called adharas which refer to the major and minor chakras. Jalandhara bandha may also be defined as the practice that locks the pranic network of the neck and redirects the flow of subtle energy from this adhara to sushumna nadi in the spine.

Moola Bandha (root lock)



Technique I: Moola Bandha (perineum contraction) Stage I: Sit in siddha/siddha yoni asana so that pressure is applied to the perineal/vaginal region. Close the eyes and relax the whole body. Be aware of the natural breath for a short while. Then focus the awareness on the perineal/vaginal region. Contract this region by pulling up on the muscles of the pelvic floor and then relaxing them. Continue to briefly contract and relax the perineal/vaginal region as rhythmically and evenly as possible.

Stage 2: Slowly contract this region and hold the contraction. Continue to breathe normally; do not hold the breath. Be totally aware of the physical sensation. Contract a little tighter, but keep the rest of the body relaxed. Contract only those muscles related to the mooladhara region. In the beginning the anal and urinary sphincters also contract, but as greater awareness and control is developed, this will be minimised and eventually will cease. Ultimately, the practitioner will feel one point of movement against the heel. Relax the muscles slowly and evenly. Adjust the tension in the spine to help focus on the point of contraction. Repeat 10 times with maximum contraction and total relaxation.

Technique 2: Moola Bandha with internal breath retention Sit in a meditation asana where the knees firmly touch the floor. The best asanas are siddha/siddha yoni asana or moola bandhasana which press the heel into the perineum and help to improve the performance of the bandha. Place the palms on the knees. Close the eyes and relax the whole body for a few minutes. Inhale deeply, retain the breath inside and perform jalandhara bandha. Maintaining jalandhara, perform moola bandha by slowly contracting the perineal/vaginal region and holding the contraction as tightly as possible. Do not strain. This is the final lock. Hold it for as long as the breath can comfortably be retained. Slowly release moola bandha, raise the head to the upright position, and exhale. Practice up to 10 times.

Breathing: The above practice may also be performed with external breath retention.

Awareness: Physical - while taking the final position and performing jalandhara bandha, awareness should be directed to the breath. In the final position the awareness should be fixed at the place of perineal contraction. Spiritual - on the breath and then on mooladhara chakra during contraction.

Contra-indications: This practice should only be performed under the guidance of an experienced yoga teacher. Moola bandha raises the energies very fast, and can precipitate symptoms of hyperactivity if wrongly prescribed or if preliminary preparation is not thorough.

Benefits: Moola bandha bestows many physical, mental and spiritual benefits. It stimulates the pelvic nerves and tones the uro-genital and excretory systems. Intestinal peristalsis is also stimulated, relieving constipation and piles. It is also beneficial for anal fissures, ulcers, prostatitis, some cases of prostatic hypertrophy and chronic pelvic infections. Because this practice releases energy, it is also effective in the treatment of psychosomatic and some degenerative illnesses. Its effects spread throughout the body via the brain and endocrine system making it very beneficial in cases of asthma, bronchitis and arthritis. It also relieves depression. The perfection of this practice leads to a spontaneous realignment of the physical, mental and psychic bodies in preparation for spiritual awakening. Moola bandha is both a means to attain sexual control (brahmacharya) and to alleviate a multitude of sexual disorders. It enables sexual energy to be directed either upward for spiritual development, or downward to enhance marital relations. It helps to relieve sexual frustration, suppression of sexual energy and feelings of sexual guilt.

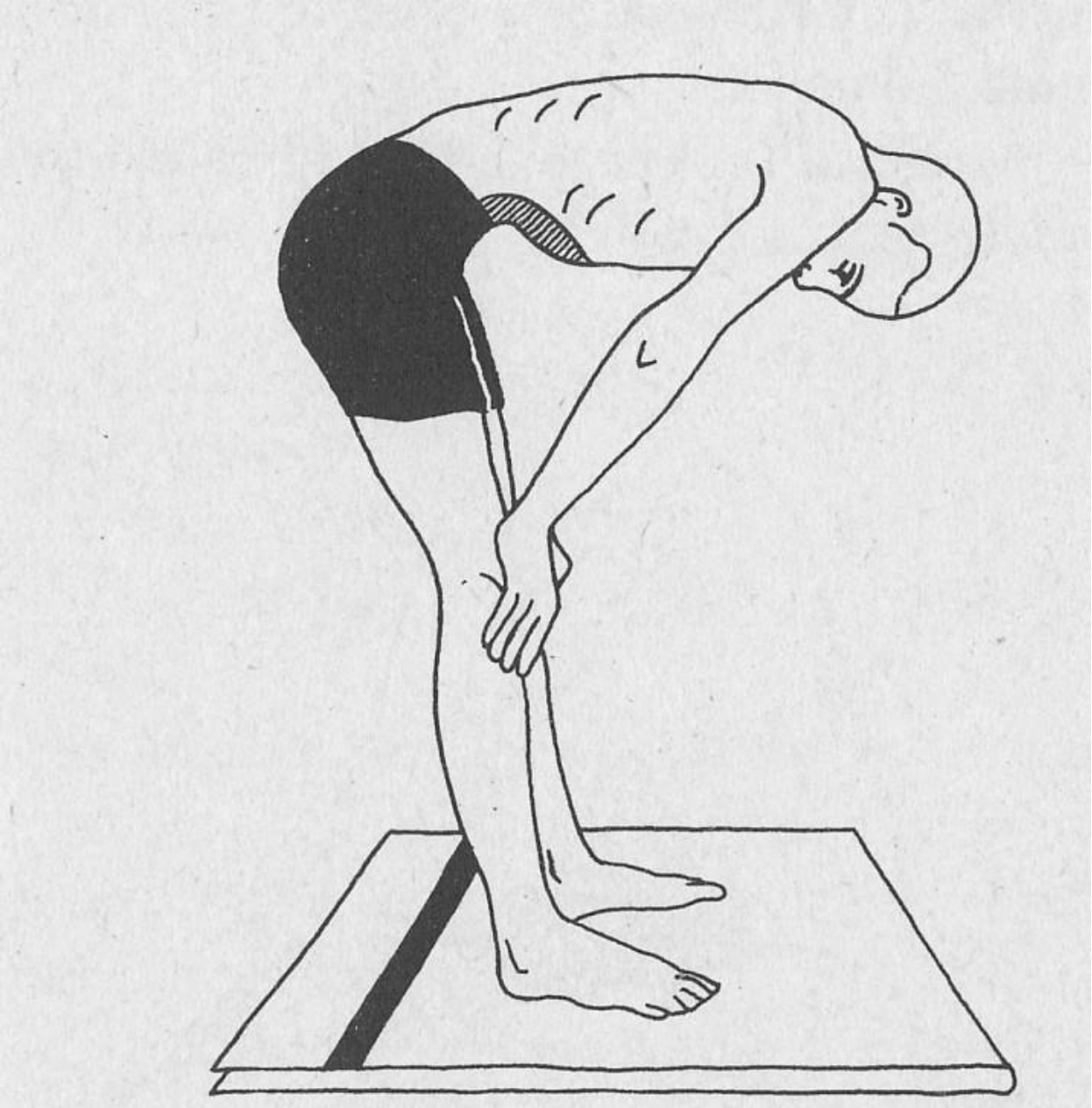
Practice note: Moola bandha is the contraction of certain muscles in the pelvic floor. It does not contract the whole perineum. In the male body the area of contraction lies between the anus and the testes. In the female body, the point of contraction is behind the cervix, where the uterus projects into the vagina. On the subtle level it is the energising of mooladhara chakra. The perineal body, which is the convergence point of many muscles in the groin, acts as a trigger point for the location of mooladhara chakra. Initially, these areas are hard to isolate and it is recommended that ashwini and vajroli mudras be perfected first in preparation for moola bandha.

Note: The Sanskrit word moola means 'root', 'firmly fixed', 'source' or 'cause'. In this context it refers to the root of the spine or the perineum where mooladhara chakra, the seat of kundalini, the primal energy, is located. Moola bandha is effective in releasing brahma granthi and for locating and awakening mooladhara chakra. For further details refer to the Bihar School of Yoga publication Moola Bandha.

Preparatory practice: Standing abdominal contraction Stand erect with the feet about half a metre apart. Inhale deeply through the nostrils. Bend forward from the waist and exhale all the air through the mouth. Try to empty the lungs as much as possible. Keep the spine horizontal and bend the knees slightly. Place the palms of the hands on the thighs just above the knees, so that the knees are supporting the weight of the upper body. The fingers can point either downward or towards each other. Make sure the arms are straight. In this position there is an automatic contraction of the abdominal region. Bend the head forward but do not press the chin against the chest. Make a false inhalation, keeping the glottis closed and expanding the chest, as though breathing in but not actually taking in air.

Straighten the legs slightly. This movement will automatically draw the abdomen upward and inward towards the spine to form uddiyana bandha. Hold this position for a comfortable length of time. Do not strain. Release the abdominal lock and relax the chest. Straighten the knees and raise the head. Exhale slightly to release the lock on the lungs and finally breathe in slowly through the nose. Remain in the standing position until the breath returns to normal before beginning the next round.

Uddiyana Bandha (abdominal contraction)



Sit in siddha/siddha yoni asana or padmasana with the spine erect and the knees in contact with the floor. A cushion may be used so that the buttocks are raised, lowering the knees. Place the palms of the hands flat on the knees. Close the eyes and relax the whole body. Breathe in deeply through the nostrils. Exhale through the mouth with a whoosh, emptying the lungs as much as possible. Hold the breath outside.

Lean forward and press down on the knees with the palms of the hands. Straighten the elbows and raise the shoulders, allowing further extension of the spinal cord. Do spontaneous jalandhara bandha, pressing the chin against the chest. Contract the abdominal muscles inward and upward. Hold the abdominal lock and the breath outside for as long as you can without straining. Then release the abdominal lock, bend the elbows and lower the shoulders. Raise the head and then slowly inhale. Remain in this position until the respiration returns to normal, then begin the next round.

Breathing: Uddiyana bandha is performed with external breath retention only.

Duration: Practice 3 rounds in the beginning and gradually increase to 10 rounds over a few months as the system becomes accustomed to the practice.

Awareness: Physical - on the abdomen and on synchronising the breath in coordination with each step. Spiritual - on manipura chakra.

Sequence: Uddiyana bandha is easier to perform if preceded by an inverted asana.

Precaution: Uddiyana bandha is an advanced technique and should be attempted only under guidance, after attaining some proficiency in breath retention, as well as jalandhara and moola bandhas.

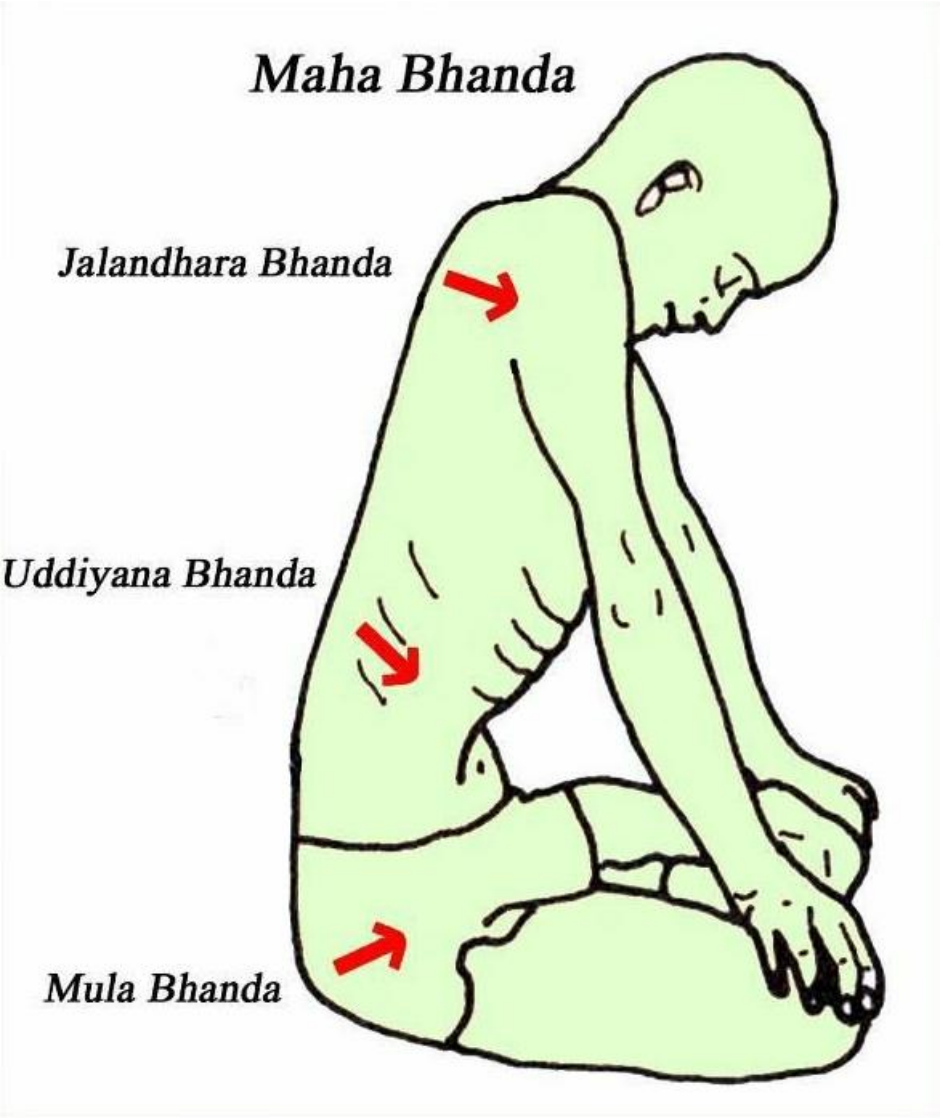
Contra-indications: Persons suffering from colitis, stomach or intestinal ulcer, diaphragmatic hernia, high blood pressure, heart disease, glaucoma and raised intracranial pressure should not perform this practice. It should also be avoided by pregnant women.

Benefits: Uddiyana bandha is the panacea for many abdominal and stomach ailments, including constipation, indigestion, worms and diabetes, provided they are not chronic. The digestive fire is stimulated and the abdominal organs are all massaged and toned. The adrenal glands are balanced, removing lethargy and soothing anxiety and tension. It improves blood circulation to the whole trunk area and strengthens all the internal organs. Uddiyana bandha stimulates the solar plexus which has many subtle influences on the distribution of energy throughout the body. It creates a suction pressure which reverses the flow of the sub-pranas, apana and prana, uniting them with samana and stimulating manipura chakra. Then there is an explosion of subtle force which travels upward through sushumna nadi.

Practice note: Uddiyana bandha must always be practiced on an empty stomach and the bowels should also be empty. Agnisar kriya is an excellent preparatory practice.

Note: The Sanskrit word uddiyana means 'to rise up' or 'to fly upward'. This practice is so-called because the physical lock applied to the body causes the diaphragm to rise towards the chest. Uddiyana is therefore often translated as the stomach lift. Another meaning is that the physical lock helps to direct prana into sushumna nadi so that it flows upward to sahasrara chakra.

Maha Bandha (the great lock)



Sit in siddha/siddha yoni asana or padmasana with the hands on the knees. The spine should be erect and the head straight. Close the eyes and relax the whole body. Breathe in slowly and deeply through the nose. Exhale forcefully and completely through the mouth. Retain the breath outside. Successively perform jalandhara, uddiyana and moola bandhas in this order. Hold the bandhas and the breath for as long as is comfortable without straining. Then release moola, uddiyana and jalandhara bandhas in this

order. Inhale slowly when the head is upright. This is one round. Keep the eyes closed, relax the body and let the breath return to normal before commencing another round.

Awareness: Physical - after performing the bandhas rotate the consciousness through the perineal, abdominal and throat regions in turn. Remain aware of each region for a few seconds and then move to the next. Spiritual - after performing the bandhas, rotate the consciousness through mooladhara, manipura and vishuddhi chakras in turn. Remain aware of each chakra for a few seconds and then move to the next.

Duration: Once proficiency is attained, and only then, increase by one round over a period of time until 9 rounds can be performed.

Precaution: Do not attempt maha bandha until the other three bandhas have been mastered.

Contra-indications: People suffering from high or low blood pressure, heart conditions, stroke, hernia, stomach or intestinal ulcer, and those recovering from any visceral ailment should avoid this practice. Pregnant women should also not attempt this practice.

Benefits: Maha bandha gives the benefits of all three bandhas. It affects the hormonal secretions of the pineal gland and regulates the entire endocrine system. The decaying, degenerative and ageing processes are checked and every cell of the body is rejuvenated. It soothes anger and introverts the mind prior to meditation. When perfected it can fully awaken prana in the main chakras. It leads to the merger of prana, apana and samana in agni mandala, which is the culmination of all pranayamas.

Practice note: Maha bandha can also be performed from utthan padasana.

Note: The Sanskrit word maha means 'great'. Maha bandha is called the great lock as it combines all the three bandhas in one practice. For the traditional hatha yoga technique refer to the Bihar School of Yoga publication Hatha Yoga Pradipika.

Introduction to Mudras

The Sanskrit word mudra is translated as 'gesture' or 'attitude'. Mudras can be described as psychic, emotional, devotional and aesthetic gestures or attitudes. Yogis have experienced mudras as attitudes of energy flow, intended to link individual pranic force with universal or cosmic force." The Kularnava Tantra traces the word mudra to the root mud meaning 'delight' or 'pleasure' and dravay, the causal form of dru which means 'to draw forth'. Mudra is also defined as a 'seal', 'short-cut' or 'circuit by-pass'. Mudras are a combination of subtle physical movements which alter mood, attitude and perception, and which deepen awareness and concentration. A mudra may involve the whole body in a combination of asana, pranayama, bandha and visualisation techniques or it may be a simple hand position. The Hatha Yoga Pradipika and other yogic texts consider mudra to be a yoganga, an independent branch of yoga, requiring a very subtle awareness. Mudras are introduced after some proficiency has been attained in asana, pranayama and bandha, and gross blockages have been removed. Mudras have been described in various texts from antiquity to the present day in order to preserve them for posterity. However, such references were never detailed or clearly delineated as these techniques were not intended to be learned from a book. Practical instruction from a guru was always considered to be a necessary requisite before attempting them. Mudras are higher practices which lead to awakening of the pranas, chakras and kundalini, and which can bestow major siddhis, psychic powers, on the advanced practitioner.

Mudras and prana

The attitudes and postures adopted during mudra practices establish a direct link between annamaya kosha, the physical body; manomaya kosha, the mental body; and pranamaya kosha, the pranic body. Initially, this enables the practitioner to develop awareness of the flow of prana in the body. Ultimately, it establishes pranic balance within the koshas and enables the redirection of subtle energy to the upper chakras, inducing higher states of consciousness. Mudras manipulate prana in much the same way that energy in the form of light or sound waves is diverted by a mirror or a cliff face. The nadis and chakras constantly radiate prana which normally escapes from the body and dissipates into the external world. By creating barriers within the body through the practice of mudra, the energy is redirected within. For example, by closing the eyes with the fingers in shanmukhi mudra, the prana being radiated through the eyes is reflected back. In the same way, the sexual energy emitted through vajra nadi is redirected to the brain through the practice of vajroli mudra. Tantric literature states that once the dissipation of prana is arrested through the practice of mudra, the mind becomes introverted, inducing states of pratyahara or sense withdrawal and dharana, concentration. Because of their ability to redirect prana, mudras are important techniques for awakening kundalini. For this reason they are extensively incorporated in kriya and kundalini yoga practices.

A scientific look at mudras

In scientific terms, mudras provide a means to access and influence the unconscious reflexes and primal, instinctive habit patterns that originate in the primitive areas of the brain around the brain stem. They establish a subtle, non-intellectual connection with these areas. Each mudra sets up a different link and has a correspondingly different effect on the body, mind and prana. The aim is to create fixed, repetitive postures and gestures which can snap the practitioner out of instinctive habit patterns and establish a more refined consciousness.

Five groups of yoga mudras

The yoga mudras can be categorized into approximately five groups which are described as follows:

HASTA, HAND MUDRAS

The hand mudras presented in this book are meditative mudras. They redirect the prana being emitted by the hands back into the body. Mudras which join the thumb and index finger engage the motor cortex at a very subtle level, generating a loop of energy which moves from the brain down the hand and then back again. Conscious awareness of this process rapidly leads to internalization. Some techniques included in this category:

- Jnana mudra
- Chin mudra
- Yoni mudra
- Bhairava mudra
- Hridaya mudra.

MANA, HEAD MUDRAS

These practices form an integral part of kundalini yoga and many are meditation techniques in their own right. They utilise the eyes, ears, nose, tongue and lips. Techniques included in this category:

- Shambhavi mudra
- Nasikagra drishti
- Khechari mudra
- Kaki mudra
- Bhujangini mudra
- Bhoochari mudra
- Akashi mudra

- Shanmukhi mudra
- Unmani mudra

KAYA, POSTURAL MUDRAS

These practices utilise physical postures combined with breathing and concentration. Techniques included in this category:

- Prana mudra
- Vipareeta karani mudra
- Yoga mudra
- Pashinee mudra
- Manduki mudra
- Tadagi mudra

BANDHA, LOCK MUDRAS

These practices combine mudra and bandha. They charge the system with prana and prepare it for kundalini awakening. Techniques included in this category:

- Maha mudra
- Maha bheda mudra
- Maha vedha mudra

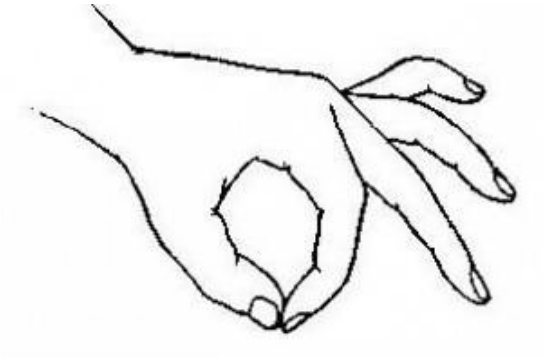
ADHARA, PERINEAL MUDRAS

These techniques redirect prana from the lower centres to the brain. Mudras concerned with sublimating sexual energy are in this group. Techniques included in this category:

- Ashwini mudra
- Vajroli/sahajoli mudra

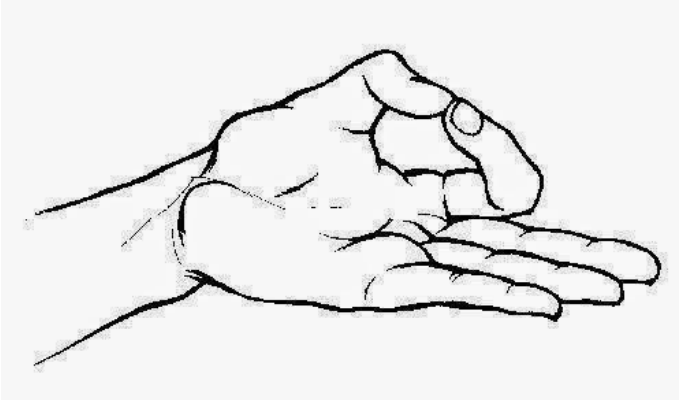
Between them these groups engage substantial areas of the cerebral cortex. The comparatively large number of head and hand mudras reflects the fact that operation and interpretation of information coming in from these two areas occupies approximately fifty percent of the cortex. Mudras are performed either in combination with or after asanas and pranayamas. The mudras presented in this book represent a small selection of those discussed in the yogic texts.

JNANA MUDRA (PSYCHIC GESTURE OF KNOWLEDGE)



Assume a comfortable meditation posture. Fold the index fingers so that they touch the inside root of the thumbs. Straighten the other three fingers of each hand so that they are relaxed and slightly apart. Place the hands on the knees with the palms facing down. Relax the hands and arms.

CHIN MUDRA (PSYCHIC GESTURE OF CONSCIOUSNESS)



Chin mudra is performed in the same way as jnana mudra except that the palms of both hands face upwards, with the backs of the hands resting on the knees. Relax the hands and arms.

Sequence: One of these two mudras should be adopted whenever practising meditation, unless otherwise specified.

Benefits: Jnana mudra and chin mudra are simple but important psycho-neural finger locks which make meditation asanas more powerful. The palms and fingers of the hands have many nerve root endings which constantly emit energy. When the finger touches the thumb, a circuit is produced which allows the energy that would normally dissipate into the environment to travel back into the body and up to the brain. When the fingers and hands are placed on the knees, the knees are sensitised, creating another pranic circuit that maintains and redirects prana within the body. In addition, placing the hands on the knees stimulates a nadi which runs from the knees, up the inside of the thighs and into the

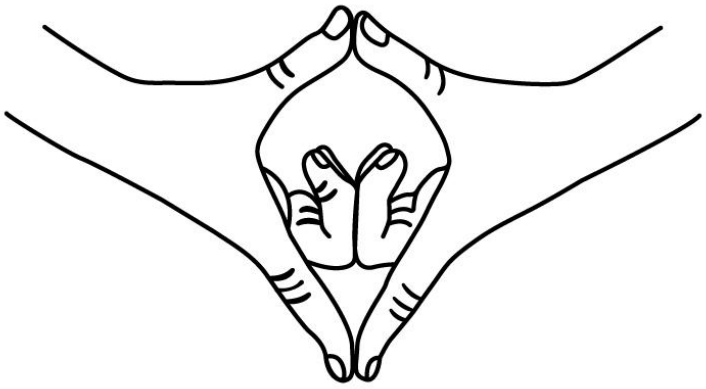
perineum. This nadi is known as gupta or the hidden nadi. Sensitising this channel helps stimulate the energies at mooladhara chakra. When the palms face upward in chin mudra, the chest area is opened up. The practitioner may experience this as a sense of lightness and receptivity which is absent in the practice of jnana mudra.

Variation: Jnana and chin mudras are often performed with the tip of the thumb and index finger touching and forming a circle. Beginners may find this variation less secure for prolonged periods of meditation as the thumb and index finger tend to separate more easily when body awareness is lost. Otherwise, this variation is as effective as the basic position.

Practice note: The effect of chin or jnana mudras is very subtle and it requires great sensitivity on the part of the practitioner to perceive the change in consciousness established. With practice, however, the mind becomes conditioned to the mudra and when it is adopted the signal to enter a meditative state is transmitted.

Note: The word jnana means 'wisdom' or 'knowledge', thus jnana mudra is the gesture of intuitive knowledge. Chin, on the other hand, is derived from the word chit or chitta which means 'consciousness'. Chin mudra, therefore, is the psychic gesture of consciousness. Symbolically, the small, ring and middle fingers represent the three gunas or qualities of nature: tamas, inertia; rajas, activity and creativity; and sattwa, luminosity and harmony. In order for consciousness to pass from ignorance to knowledge these three states must be transcended. The index finger represents individual consciousness, the jivatma, while the thumb symbolises supreme consciousness. Injnana and chin mudras the individual (index finger) is bowing down to the supreme consciousness (the thumb), acknowledging its unsurpassed power. The index finger, however, is touching the thumb, symbolising the ultimate unity of the two experiences and the culmination of yoga.

YONI MUDRA (ATTITUDE OF THE WOMB OR SOURCE)



Assume a comfortable meditation posture with the head and spine straight. Place the palms of the hands together with the fingers and thumbs straight and pointing away from the body. Keeping the

pads of the index fingers together, turn the little, ring and middle fingers inwards so that the backs of the fingers are touching. Interlock the little, ring and middle fingers. Bring the thumbs towards the body and join the pads of the fingers together to form the base of a yoni or womb shape.

Benefits: The interlocking of the fingers in this practice creates a complete cross connection of energies from the right hand into the left and vice versa. As well as balancing the energies in the body, it helps balance the activities of the right and left hemispheres of the brain. Placing the tips of the index fingers and thumbs together further intensifies the flow of prana. This mudra makes the body and mind more stable in meditation and develops greater concentration, awareness and internal physical relaxation. It redirects prana back into the body which would otherwise be dispersed. The elbows naturally tend to point to the side when performing this mudra which helps open up the chest area.

Variation: Yoni mudra may also be performed by interlocking the middle, ring and little fingers without turning them inward. The thumbs may be crossed in front of the outstretched index fingers, or outstretched with the pads touching towards the body.

Note: The word yoni means 'womb' or 'source'. Yoni mudra invokes the primal energy inherent in the womb or source of creation.

BHAIRAVA MUDRA (FIERCE OR TERRIFYING ATTITUDE)

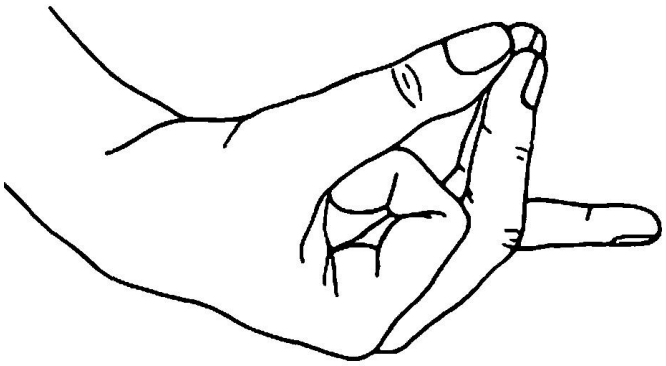
Assume a comfortable meditation posture with the head and spine straight. Place the right hand on top of the left, so that the palms of both hands are facing up. Both hands then rest in the lap. Close the eyes and relax the whole body, keeping it motionless.

Variation: When the left hand is placed on top of the right the practice is called Bhairavi mudra. Bhairavi is the female counterpart of Bhairava.

Note: Bhairava is the fierce or terrifying form of Lord Shiva, the aspect responsible for the dissolution of the universe. The two hands represent ida and pingala nadis, and the union of the individual with the

supreme consciousness. Bhairava mudra is used in prana mudra. It may also be used during pranayama and meditation practice.

HRIDAYA MUDRA (HEART GESTURE)



Sit in any comfortable meditation asana with the head and spine straight. Place the tips of the index fingers at the root of the thumbs, as in chin and jnana mudras, and join the tips of the middle and ring fingers to the tips of the thumbs so they are placed side by side. The little finger remains straight. Place the hands on the knees with the palms facing upward. Close the eyes and relax the whole body, keeping it motionless.

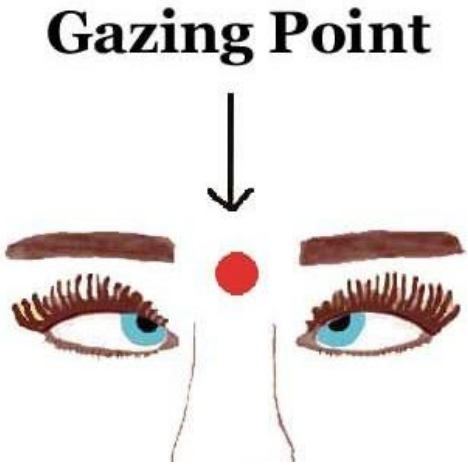
Duration: This practice may be performed for up to 30 minutes.

Awareness: Physical - on the breath in the chest area.

Spiritual - on anahata chakra.

Benefits: This mudra diverts the flow of prana from the hands to the heart area, improving the vitality of the physical heart. The middle and ring fingers relate directly to nadis connected with the heart, while the thumb closes the pranic circuit and acts as an energiser, diverting the flow of prana from the hands to these nadis. Hridaya mudra is, therefore, beneficial for heart ailments, especially ischemic heart disease. It is very simple and may be used safely and easily in acute situations. The heart is the centre of emotion. Hridaya mudra helps to release pent-up emotion and unburden the heart. It may be practiced during emotional conflict and crisis.

SHAMBHAVI MUDRA (EYEBROW CENTRE GAZING)



Sit in any comfortable meditation asana. Keep the head and spine upright and straight, and place the hands on the knees in either chin or jnana mudra. Close the eyes and relax the whole body. Relax all the muscles of the face, including the forehead, the eyes and behind the eyes. Slowly open the eyes and look ahead at a fixed point, keeping the head and the whole body absolutely still. Next, look upward and inward, focusing the eyes at the eyebrow centre. The head should not move. When performed correctly the two curved eyebrows will form a V-shaped image at the root of the nose. This point is the location of the eyebrow centre. If the V-formation cannot be seen, the eyes are not converging as they should. Hold the gaze for only a few seconds at first. Release at the slightest sensation of strain. Close the eyes and relax them. Try to suspend the thought processes and meditate on the stillness in chidakasha, the dark space in front of the closed eyes.

Breathing: After mastering the eye movement, coordinate it with the breath. Breathe in slowly as the eyes are raised. Hold the breath while maintaining the mudra. Breathe out slowly as the gaze is lowered.

Duration: Start with 5 rounds and gradually increase to 10 over a period of months.

Precautions: The eyes are very sensitive and consequently the final position should not be held for too long. If the nerves are weak and there is any strain, retinal detachment can take place. Release the position if any strain is experienced.

Contra-indications: People suffering from glaucoma, diabetic retinopathy or those who have just had cataract surgery, lens implant or other eye operations, should not perform shambhavi without expert guidance.

Benefits: Physically, shambhavi mudra strengthens the eye muscles and releases accumulated tension in this area. Mentally, it calms the mind, removing emotional stress and anger. It develops concentration, mental stability and the state of thoughtlessness. Regular practice of shambhavi mudra

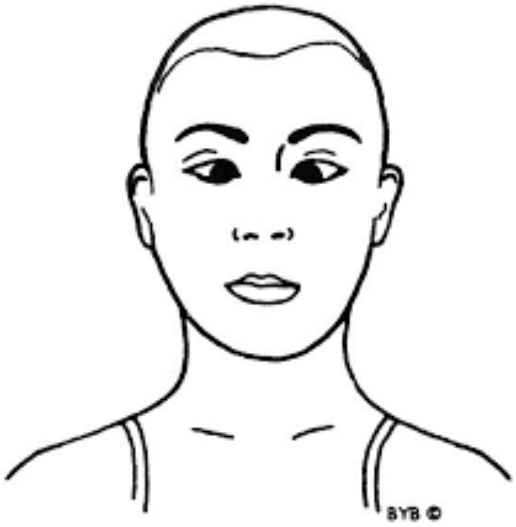
retards degeneration of the pineal gland and is therefore recommended for children from the age of eight onwards to balance their emotional development.

Advanced practice: (internal shambhavi mudra) Once shambhavi mudra has been mastered with the eyes open, it may be performed with the eyes closed. This is a more powerful practice because the awareness is more internalised. Be careful not to relax the eyes and stop the practice without being aware of it. Always ensure that, although the eyes are closed, they are still gazing upward internally.

Practice note: Shambhavi mudra is an integral part of kriya yoga. It is a powerful technique for awakening ajna chakra and is a meditation practice in its own right. As such it may produce profound experiences when performed for long periods of time; however, it should only be performed under the guidance of a guru. Shambhavi mudra is also incorporated in asanas such as simhasana, the lion pose.

Note: Shambhavi is the wife or consort of Shambhu and both are aspects of Shakti and Lord Shiva. According to tradition, Shambhu taught Shambhavi the practice of shambhavi mudra as a means of attaining higher awareness. It is said that practising this mudra will stir Shambhu and make Him appear, meaning that it will induce higher consciousness within the practitioner. The practice is also known as bhrumadhya drishti; bhru means 'eyebrow centre' and drishti means gazing', hence this is the practice of eyebrow centre gazing.

NASIKAGRA DRISHTI



Preparatory practice: It may be difficult at first to focus the eyes on the nose tip. To overcome this, hold the index finger up at arm's length from the eyes and focus on it. Slowly bring the finger towards the nose, keeping the gaze steadily fixed upon it. When the finger touches the tip of the nose, the eyes should still be focused on the finger. Transfer the focus of the eyes to the nose tip. Eventually this method becomes superfluous and the eyes readily fix on the nose tip at will.

Sit in any comfortable meditation posture with the head and spine straight. Rest the hands on the knees in either chin or jnana mudra. Close the eyes and relax the whole body. Open the eyes and focus them on the nose tip. Do not strain the eyes in any way. When the eyes are correctly focused a double outline of the nose is seen. These two lines converge at the tip of the nose forming an inverted V-image. Concentrate on the apex of the V. Try to become completely absorbed in the practice to the exclusion of all other thoughts. After a few seconds, close the eyes and relax them before repeating the practice. Continue for up to 5 minutes.

Breathing: Nasikagra drishti should be practiced with normal breathing in the beginning until the eyes have adjusted to the downward gaze. Later the practice can be combined with antar kumbhaka (inner retention) but not with bahir kumbhaka (external retention). When combining the practice with antar kumbhaka, the eyes remain closed during inhalation and exhalation.

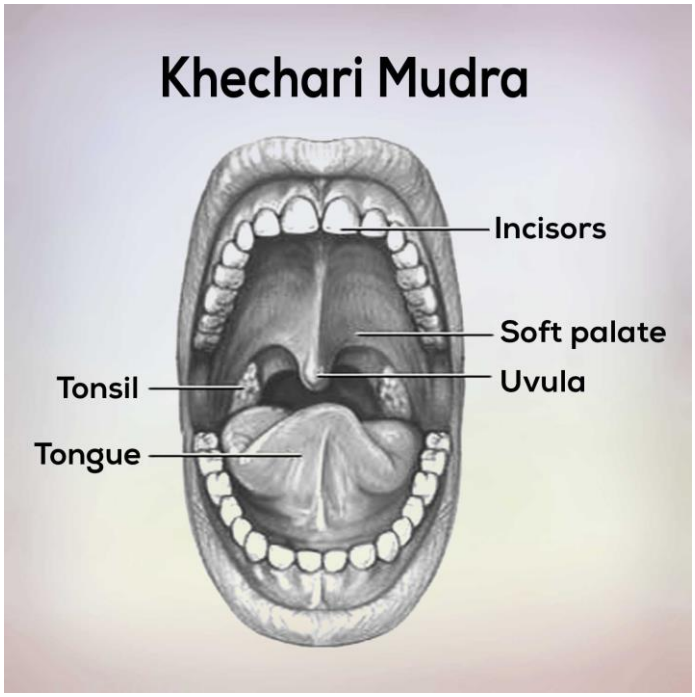
Awareness: Although the eyes are open, the aim of this practice is to create introspection. The open eyes should not be aware of the outside world. Focusing them on the nose tip concentrates the mind. **Time of practice:** Nasikagra drishti may be practiced at any time of day although ideally it is performed early in the morning or late at night before sleep.

Contra-indications: As for shambhavi mudra. Those suffering from depression should avoid this introverting practice.

Benefits: The benefits of nasikagra drishti are similar to those of trataka (see the section Shatkarma). Nasikagra drishti is an excellent technique for calming anger and disturbed states of mind. It develops the powers of concentration. If performed with awareness for a long period, it helps to awaken mooladhara chakra and induce meditative states. It takes the practitioner into the psychic and spiritual planes of consciousness.

Note: The word nasi means 'nose', kagra means 'tip' and drishti means 'gazing'. Another name for this practice is agochari mudra which comes from the Sanskrit word agocharam meaning 'beyond sensory perception', 'unknown' or 'invisible'. This mudra, therefore, enables the practitioner to transcend normal awareness. Symbolically, in nasikagra drishti the bridge of the nose is related to the spinal cord. At the top is the eyebrow centre, ajna chakra, while at the bottom is the nose tip, mooladhara chakra. Just as shambhavi mudra aims to activate ajna chakra by gazing at the eyebrow centre, nasikagra drishti aims to activate mooladhara chakra by gazing at the nose tip.

KHECHARI MUDRA (TONGUE LOCK)



Sit in any comfortable meditation pose, preferably padmasana or siddha/siddha yoni asana, with the head and spine straight and the hands in chin or jnana mudra. Relax the whole body and close the eyes. Fold the tongue upward and backward so that the lower surface lies in contact with the upper palate. Stretch the tip of the tongue backward as far as is comfortable. Do not strain. Perform ujjayi pranayama. Breathe slowly and deeply. Hold for as long as possible. At first there may be some discomfort and ujjayi pranayama may irritate the throat, but with practice it will become more comfortable. When the tongue becomes tired, relax it and then repeat the practice.

Breathing: Gradually reduce the respiration rate over a period of months until the number of breaths per minute is 5 or 6. This may be reduced further under expert guidance.

Duration: Practice for 5 to 10 minutes. Khechari mudra may also be performed with other yoga practices.

Awareness: Physical - at the throat. Spiritual - at vishuddhi chakra. The awareness will also change depending on the meditation practice being performed.

Precaution: Discontinue this mudra if a bitter secretion is tasted. Such a secretion is a sign of toxins in the system.

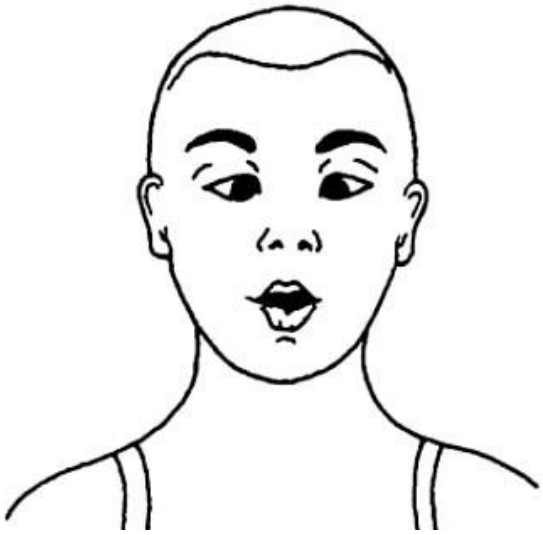
Contra-indications: Tongue ulcers and other common mouth ailments will temporarily preclude performance of this practice.

Benefits: Khechari mudra stimulates a number of pressure points located in the back of the mouth and the nasal cavity. These points influence the whole body. A number of glands are also massaged, stimulating the secretion of certain hormones and of saliva. This practice reduces the sensations of hunger and thirst, and induces a state of inner calm and stillness. It preserves the vitality of the body and is especially beneficial for inner healing. Khechari combined with ujjayi pranayama is useful for women in labour when practiced between contractions. Women should be thoroughly proficient in the practice, however, before using it in this way. Ujjayi and khechari are also used in combination to develop awareness of the spinal and frontal psychic passages. Ultimately, this mudra has the potential to stimulate prana and awaken kundalini shakti.

Practice note: The advanced hatha yoga form of this practice involves the careful severing of the frenum beneath the tongue so that it can move right into the nasal cavity and stimulate important psychic centres situated there. This form of khechari mudra is not recommended here, however, as the effects make it unsuitable for interaction with the outside world.

Note: The word khechari comes from the two Sanskrit roots khe meaning 'sky' and chary a meaning 'one who moves'. Khechari mudra is associated with amrita, the nectar or elixir of life which is secreted from bindu, a point situated at the posterior fontanel, and then collected at vishuddhi chakra. Perfection of this practice enables the yogi to trap the descending drops of amrita at vishuddhi, overcoming hunger and thirst, and rejuvenating the entire body.

KAKI MUDRA (THE CROW'S BEAK)



Sit in any comfortable meditation asana with the head and spine straight and the hands resting on the knees in either chin or jnana mudra. Close the eyes and relax the whole body for a few minutes. Open the eyes and perform nasikagra drishti by focusing both eyes on the nose tip. Try not to blink the eyes throughout this practice. Purse the lips forming a beak through which air may be inhaled. The tongue

should be relaxed. Breathe in slowly and deeply through the pursed lips. At the end of inhalation close the lips and exhale slowly through the nose. Repeat the process for 3 to 5 minutes.

Duration: This practice may be continued for a longer duration; however, care should be taken not to strain the eyes.

Awareness: Be aware of the flow and sound of the breath, and of the nose tip.

Sequence: This mudra restores heat balance in the body and may be performed after heating pranayamas.

Time of practice: It may be performed at any time of day, although it is best performed early in the morning or late at night. It should not be performed in cold weather.

Precautions: Kaki mudra should not be practiced in a polluted atmosphere or in excessively cold weather because the normal filtering and air-conditioning function of the nose is bypassed.

Contra-indications: People suffering from depression, low blood pressure and chronic constipation should avoid this practice.

Benefits: Kaki mudra cools the body and mind and soothes mental tensions, alleviating disorders such as high blood pressure. In addition to the benefits of nasikagra drishti, the act of pursing the lips in this practice, together with the contact of the indrawn air with the membranes of the mouth, stimulates digestive secretions aiding the digestive process generally. It also purifies the blood. Practice note: Practitioners should be thoroughly familiar with nasikagra drishti prior to commencing this technique. The eyes must be kept open throughout the practice and nasikagra drishti should be continuous. If the eyes become tired, relax them for as long as necessary before recommencing the practice.

Note: The word kaki means 'crow'. Kaki mudra is so-called because during inhalation the mouth is shaped like a crow's beak. It is claimed that regular practice of this mudra leads to the disease free, long life that is associated with the crow. This mudra is also considered to be a pranayama practice because of its close similarity to sheetali and seetkari pranayamas.

Bhujangini Mudra (cobra respiration)

Sit in any comfortable meditation asana. Close the eyes and relax the whole body, especially the abdomen. Push the chin forward and up a little. Try to suck in air through the mouth and draw it into the stomach, not the lungs, in a series of gulps as though drinking water. Expand the stomach as much as possible. Hold the air inside for as long as comfortable, then expel it by belching.

Duration: 3 to 5 times is sufficient for general purposes; for specific ailments it may be repeated more often. Sequence: This mudra may be practiced at any time but is particularly powerful when performed after the technique of shankhaprakshalana.

Benefits: Bhujangini mudra rejuvenates the oesophagus walls and the glands that secrete the digestive juices. It tones the whole stomach, removes stagnant wind and helps alleviate abdominal disorders. Retaining air in the stomach enables the practitioner to float in water for any length of time.

BHOOCHARI MUDRA (GAZING INTO NOTHINGNESS)

Sit in any comfortable meditation asana with the head and spine straight and the left hand in chin or jnana mudra. Close the eyes and relax the whole body. Open the eyes and raise the right hand in front of the face. The elbow should point to the side of the body. Hold the hand horizontally, palm down with all the fingers together. The side of the thumb should be in contact with the top of the upper lip. Focus the eyes on the tip of the little finger and gaze at it intently for a minute or so without blinking or flickering the eyes. Try to maintain continuous awareness of the fingertip. After a minute or so remove the hand but continue to gaze into nothingness at the place where the little finger was in front of the face. Try not to blink. Become fully engrossed in this point of nothingness. Simultaneously be aware of any thought processes. Be aware of space only; there should be no registration of outer events in the field of conscious perception. Continue the practice for 5 to 10 minutes.

Contra-indications: As for shambhavi mudra.

Benefits: Same as for nasikagra drishti and shambhavi mudra. Bhoochari mudra develops the power of concentration and memory. It tranquillises and introverts the mind and is particularly beneficial for people who express a lot of anger.

Practice note: Bhoochari mudra may be practiced in almost any position and in almost any place. However, it is best performed facing a blank wall or an open space such as the sky or a body of still water. This ensures that there are no visual obstructions to distract the attention.

Note: Bhoochari mudra may be performed as a preparation for meditation and as a meditation technique in its own right. It belongs to a group of techniques featuring gazing at an external focal point as a means to achieve dharana or the meditative state of relaxed concentration. It is allied to nasikagra drishti and shambhavi mudras, all three being forms of trataka.

AKASHI MUDRA (AWARENESS OF INNER SPACE)

Sit in any comfortable meditation asana. Close the eyes and relax the whole body for a few minutes. Fold the tongue back against the palate in khechari mudra. Practice ujjayi pranayama and shambhavi mudra. Simultaneously bend the head back about 45 degrees. Straighten the arms and lock the elbows, pressing the knees with the hands. Breathe slowly and deeply in ujjayi. Continue for as long as you feel comfortable. Bend the elbows and release khechari and shambhavi mudras. Stop ujjayi and raise the head to the upright position. Breath normally for a few seconds and be aware of the inner space before starting the next round.

Duration: Begin with 1 to 3 rounds and gradually increase to 5 rounds. Maintain the final position for as long as possible, increasing the length of time in the mudra very slowly.

Awareness: On ajna chakra.

Precaution: If faintness is felt stop the practice. This technique must be learned slowly and under expert guidance.

Contra-indications: People suffering from high blood pressure, vertigo, brain disorders or epilepsy should not practice this mudra.

Benefits: This practice combines the benefits of kumbhaka, ujjayi, shambhavi, khechari. It can induce calmness and tranquillity, and develop control over the senses. When it is perfected, it arrests the thought processes and induces higher states of consciousness.

Variation: Akashi mudra may also be practiced with breath retention. Perform the practice as described above. Inhale while bending the head backwards. Hold the breath inside in the final position. Exhale while slowly raising the head to the starting position.

Practice note: It is recommended that the practitioner be completely familiar with the practices of ujjayi, khechari and shambhavi before commencing akashi mudra. At first ujjayi pranayama may irritate the throat when performed with the head back. However, with practice, it will become more comfortable.

Note: Like bhoochari, akashi mudra belongs to a group of techniques featuring gazing at an external focal point as a means to achieving dharana or the meditative state of relaxed concentration. For illustration refer to moorchha pranayama.

SHANMUKHI MUDRA (CLOSING THE SEVEN GATES)

Sit in siddha/siddha yoni asana, if possible. Otherwise take a comfortable meditation asana and place a small cushion beneath the perineum to provide pressure in this area. Hold the head and spine straight. Close the eyes and place the hands on the knees. Relax the whole body. Raise the arms in front of the face with the elbows pointing sideways. Close the ears with the thumbs, the eyes with the index fingers, the nostrils with the middle fingers, and the mouth by placing the ring and little fingers above and

below the lips. Release the pressure of the middle fingers and open the nostrils. Inhale slowly and deeply, using full yogic breathing. At the end of inhalation close the nostrils with the middle fingers. Retain the breath inside for as long as is comfortable. Try to hear any manifestation of sound in the region of bindu, ajna or anahata chakras. There may be many sounds or none at all; just listen. After some time, release the pressure of the middle fingers and slowly breathe out. This is one round. Breathe in again immediately to start another round. Continue in this way throughout the practice. To end the practice, lower the hands to the knees, keeping the eyes closed, and slowly begin to externalise the mind by becoming aware of external sounds and the physical body.

Breathing: This technique gives greater benefits when the practitioner can retain the breath for extended periods. Those who have been practising nadi shodhana pranayama regularly will find this practice easier.

Duration: Practice for 5 to 10 minutes to begin with, gradually building up, over a period of months to 30 minutes.

Awareness: Bindu, ajna or anahata chakra may be used for concentration. The important thing is to become aware of progressively more subtle sounds.

Time of practice: Shanmukhi mudra is best practiced early in the morning or late at night when there is maximum quiet. Practising at this time awakens psychic sensitivity.

Contra-indications: People suffering from depression should avoid this practice.

Benefits: Physically, the energy and heat from the hands and fingers stimulate and relax the nerves and muscles of the face. Physically, this practice helps in the treatment of eye, nose and throat infections and to alleviate vertigo. Mentally, it balances the internal and external awareness. Spiritually, it induces the state of pratyahara or sense withdrawal.

Practice note: Do not expect to hear subtle sounds immediately; practice is necessary. At first there may be no sound or a confused jumble of sounds. Upon hearing one distinct sound, focus the awareness totally upon it. This may take a few weeks of practice. As sensitivity develops, another fainter sound will be heard behind it. Leave the first sound and transfer the awareness to the fainter sound. Again, a third sound will begin to emerge behind the second sound. Carry on in this way, discarding the grosser sounds for the more subtle. The aim is to reach the source of all sound, not to become lost in the beautiful sounds along the way.

Note: The word shanmukhi is comprised of two roots: shan means 'seven' and mukhi means 'gates' or 'faces'. Shanmukhi mudra involves redirecting the awareness inside by closing the seven doors of outer perception: the two eyes, ears and nostrils, and the mouth. This practice is also known as baddha yoni asana, the locked source pose; devi mudra, attitude of the great goddess; parangmukhi mudra, the gesture of inner focusing; and sambhava mudra, the gesture of equipoise.

Unmani Mudra (the attitude of mindlessness)

Sit in any comfortable meditation asana, preferably siddha/ siddha yoni asana or padmasana. Open the eyes fully but without straining. Take a deep breath in and, holding the breath inside, focus the awareness at bindu in the back of the head for a few seconds. Breathe out and let the awareness descend with the breath from bindu through the chakras in the spine: ajna, vishuddhi, anahata, manipura, swadhisthana, mooladhara. The eyes should slowly close and be fully closed by the time the awareness reaches mooladhara. Even when the eyes are open the awareness is looking within. Do not try too hard but allow the process to occur spontaneously. Inhale deeply and begin the next round. Continue for 5 to 10 minutes.

Contra-indications: As for shambhavi mudra.

Benefits: Unmani mudra is a simple technique that induces a meditative state. It also calms general stress and agitation.

Practice note: Physically, this practice is very easy to perform. The emphasis, however, should be on the mental process taking place. When the eyes are open they should not register anything outside.

Note: The word unmani literally means 'no mind' or 'not thinking'. It may also be translated as 'the attitude of thoughtlessness' or 'meditation'. Unmani implies that state which is beyond thought, a state where all attachment to the world of objects is dispelled. In this state, the mind functions and action takes place but without the hindrance of conflicting thoughts and analysis. This is known as unmani awastha, the state of no thought.

Prana Mudra (invocation of energy)

Sit in any comfortable meditation posture, preferably padmasana or siddha/siddha yoni asana with the hands in bhairava mudra. Close the eyes and relax the whole body especially the abdomen, arms and hands.

Stage I: Keeping the eyes closed, inhale and exhale as deeply as possible, contracting the abdominal muscles to expel the maximum amount of air from the lungs. With the breath held outside perform moola bandha while concentrating on mooladhara chakra in the perineum. Retain the breath outside for as long as is comfortable.

Stage 2: Release moola bandha. Inhale slowly and deeply, expanding the abdomen fully to draw as much air into the lungs as possible. Simultaneously, raise the hands until they are in front of the navel. The hands should be open with the fingers pointing towards each other but not touching, and the palms facing the trunk of the body. The movement of the hands should be coordinated with the abdominal inhalation. The arms and hands should be relaxed. While inhaling from the abdomen, try to feel the prana or vital energy being drawn from mooladhara chakra to manipura chakra in the spinal column.
Stage 3: Continue the inhalation by expanding the chest and raising the hands until they are directly in

front of the heart centre. Try to feel the pranic energy being drawn up from manipura to anahata chakra while inhaling.

Stage 4: Draw even more air into the lungs by slightly raising the shoulders, and feel the prana being drawn up to vishuddhi. Raise the hands to the front of the throat in coordination with the breath.

Stage 5: Retain the breath inside while spreading the arms out to the sides. In the final position the hands must be level with the ears, the arms outstretched but not straight, and the palms turned upward. Feel the prana spreading like a wave to ajna, bindu and sahasrara chakras. Concentrate on sahasrara chakra and try to visualise an aura of pure light emanating from the head. Feel that the whole being is radiating vibrations of peace to all beings. Retain this position for as long as possible without straining the lungs in any way. Repeat stages 4, 3, 2, 1, and slowly return to the starting position while exhaling. During exhalation, feel the prana progressively descending through each of the chakras until it reaches mooladhara. At the end of exhalation perform moola bandha and concentrate on mooladhara chakra. Then relax the whole body and breathe normally. When the practice has been perfected, visualise the breath as a stream of white light ascending and descending within sushumna nadi.

Breathing: Increase the duration of inhalation, retention and exhalation slowly. Be careful not to strain the lungs.

Awareness: The awareness should move in a smooth and continuous flow from mooladhara to sahasrara and back to mooladhara, in coordination with the breath and the raising and lowering of the hands.

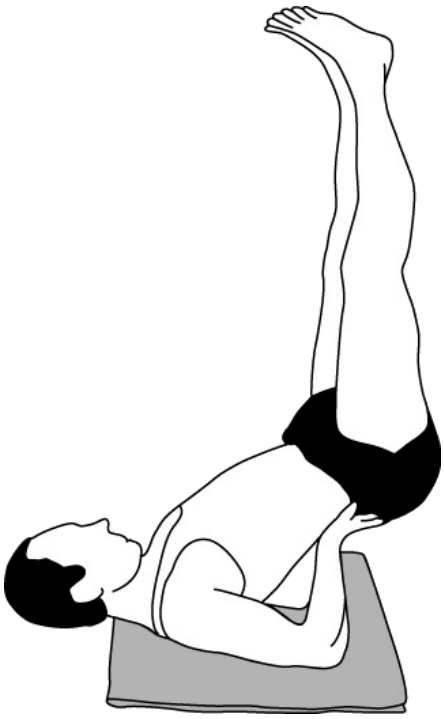
Sequence: Prana mudra is best practiced after asana and pranayama and before meditation, but it may also be performed at any time.

Time of practice: Prana mudra is ideally practiced at sunrise, while facing the sun.

Benefits: Prana mudra awakens the dormant prana shakti, vital energy, and distributes it throughout the body, increasing strength, health and confidence. It develops awareness of the pranic system, the nadis and chakras, and the subtle flow of prana in the body. It instils an inner attitude of peace and equanimity by adopting an external attitude of offering and receiving energy to and from the cosmic source. Prana mudra is also considered to be a pranayama practice which raises prana by encouraging correct breathing. Practice note: Remember to return the prana to mooladhara at the end of the practice.

Note: This practice is also known as shanti mudra, the peace mudra.

VIPAREETA KARANI MUDRA (INVERTED PSYCHIC ATTITUDE)



Assume the inverted posture of vipareeta karani asana (see chapter Inverted Asanas). Keeping the legs straight and together, tilt them slightly over the head so that the eyes look straight up at the feet. Close the eyes and relax the whole body. Fix the awareness at manipura chakra in the spine, directly behind the navel. This is the starting position. Inhale slowly and deeply with ujjayi pranayama. Feel the breath and consciousness moving from manipura to vishuddhi chakra situated in the spine, behind the throat pit. While exhaling, maintain the awareness at vishuddhi. At the end of exhalation, immediately bring the awareness back to manipura and repeat the same process. Continue for as long as the asana can be comfortably maintained.

Duration: Practice 5 to 7 rounds or until discomfort arises. If pressure builds up in the head, end the practice. Gradually increase the number of rounds up to 21 over a period of months. The length of the inhalation and exhalation will increase spontaneously over time as the practice becomes more comfortable.

Awareness: On manipura, vishuddhi and the movement of the breath

Sequence: At the end of the daily practice programme and before meditation. Do not perform after vigorous exercise or for at least 3 hours after meals. Upon completion of the practice it is advisable to do a backward bending asana such as matsyasana, bhujangasana or ushtrasana.

Time of practice: Vipareeta karani mudra should be practiced daily at the same time, preferably in the early morning.

Contra-indications: This is an inverted practice and should not be performed unless the body is healthy. People suffering from high blood pressure, heart disease, enlarged thyroid or excessive toxins in the body should not perform this practice.

Benefits: This practice gives all the benefits of vipareeta karani asana. It balances hypoactive thyroid and acts as a preventative for cough, cold, sore throat and bronchial disorders. It stimulates the appetite and digestion, and helps relieve constipation. Regular practice prevents atherosclerosis by restoring vascular tone and elasticity. It relieves prolapse, haemorrhoids, varicose veins and hernia, all of which are exacerbated by the downward pull of gravity. Circulation to the brain is enhanced, especially to the cerebral cortex and pituitary and pineal glands. Cerebral insufficiency and senile dementia are counteracted and mental alertness increased. The inverted posture sustained in this mudra is used to reverse the downward and outward movement of energy and redirect it back to the brain. When this happens the whole being is revitalised and awareness expands. As the practice is perfected, the flow of prana in ida and pingala nadis becomes balanced. This state manifests as an equal flow of breath in the nostrils. The balancing effect of the practice also helps prevent disease from manifesting on the physical and mental planes.

Practice note: The metabolic rate may increase when this mudra is practiced for periods of half an hour or more. If this happens, food intake should be adjusted accordingly.

Note: The Sanskrit word vipareeta means 'inverted' and karani means 'one who does'. Vipareeta karani mudra is also practiced as a kriya.

YOGA MUDRA (ATTITUDE OF PSYCHIC UNION)

Sit in padmasana. Take hold of one wrist behind the back. Close the eyes and relax the whole body. Bring the awareness to mooladhara chakra (slight moola bandha may also be performed.) Inhale slowly and feel the breath gradually rising from mooladhara to ajna chakra. Retain the breath for a few seconds and concentrate on ajna chakra. Exhale slowly while bending forward, synchronising the movement with the breath so that the forehead just touches the floor as the air is fully expelled from the lungs. Final position is yogamudrasana. Simultaneously, feel the breath gradually move downward from ajna to mooladhara chakra. Retain the breath outside for a few seconds while concentrating on mooladhara chakra. Inhale, raise the trunk to the vertical position and be aware of the breath moving upward from mooladhara to ajna chakra. All these movements should be performed in a harmonious, smooth and synchronised manner. Remaining in the upright position, hold the breath for a few seconds while concentrating on ajna chakra. Exhale slowly, moving the awareness back down the spine with the breath to mooladhara chakra. This is one round. Immediately start another round performing slight moola bandha with the breath still held out and the awareness at mooladhara chakra. Beginners may rest by taking a few normal breaths before starting another round. Perform 3 to 10 rounds.

Breathing: The respiration should be as slow as possible without the slightest strain. Sequence: This practice may be followed by any backward bending asana such as bhujangasana or ushtrasana.

Awareness: On synchronising the movements with the breath and on relaxing the back and abdomen.

Contra-indications: People suffering from sciatica, high blood pressure, pelvic inflammatory disease or any other serious abdominal ailment should avoid this practice.

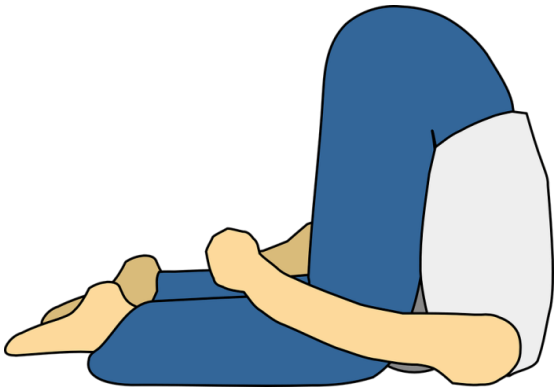
Benefits: This practice gives all the benefits of yogamudrasana. In addition it is an excellent preparatory practice for meditation. The pressure along the abdomen and chest created by the legs and heels calms the adrenal system, engendering a sense of relaxation. It relieves anger and tension, inducing tranquillity, and develops awareness and control of psychic energy.

Variations: The position of the hands may also be: a) placed on the heels of the feet, with the elbows pointing out to the sides, b) placed palms down on the soles of the feet, c) placed palm to palm with the fingers pointing upward in the middle of the back (this is hamsa or swan mudra).

Practice note: People with stiff backs and those unable to sit in padmasana comfortably may perform the practice from sukhasana or vajrasana. If adopting the latter, bend forward into shashankasana with the hands clasped behind the back. If vajrasana is still uncomfortable, the knees may be separated slightly, allowing the chest to come closer to the floor.

Note: Yoga mudra is so called because it unites the individual consciousness with the supreme consciousness, or the outer nature with the inner nature.

PASHINEE MUDRA (FOLDED PSYCHIC ATTITUDE)



Assume halasana. Separate the feet by about half a metre. Bend the knees and bring the thighs towards the chest until the knees touch the ears, shoulders and floor. Wrap the arms tightly around the back of the legs. Relax the whole body in this position and close the eyes. Breathe slowly and deeply. Maintain the position for as long as is comfortable. Slowly release the arms and come back into halasana. Lower the legs and relax in shavasana.

Awareness: Physical - on the stretch of the neck. Spiritual - Mooladhara or vishuddhi chakra.

Sequence: This mudra should be followed by a backward bending asana.

Contra-indications: As for sarvangasana and halasana. People suffering from any spinal condition should avoid this practice.

Benefits: Pashinee mudra brings balance and tranquillity to the nervous system and induces pratyahara, sense withdrawal. It stretches the spine and the back muscles and stimulates all the spinal nerves in and around the spine. It massages all the abdominal organs.

Note: The word pash means 'noose'. Pashinee, therefore, means 'bound in a noose'.

MANDUKI MUDRA (GESTURE OF THE FROG)

Sit in bhadrasana with the toes pointing outward (see chapter Vajrasana Group of Asanas). If it is not comfortable to sit with the toes pointing outward, sit in bhadrasana with the toes pointing inwards. The buttocks should rest on the floor. If this is still too difficult, place a folded blanket underneath the buttocks to apply firm pressure to the perineum, stimulating the region of mooladhara chakra. Place the hands on the knees, hold the spine and head straight. Close the eyes and relax the whole body. This is manduki asana. After some time, open the eyes and perform nasikagra drishti. If the eyes become tired relax them for a minute or so. Continue the practice for 5 minutes until the mind and senses become introverted.

Breathing: Breathing should be slow and rhythmic.

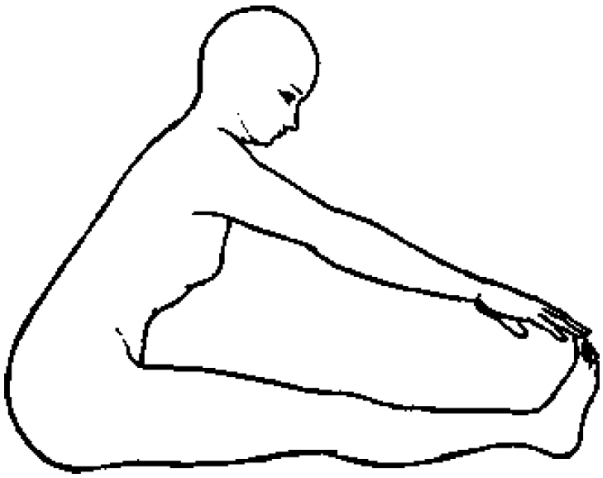
Awareness: On the nosetip.

Contra-indications: As for shambhavi mudra. 459 Benefits: The nose is related with mooladhara chakra through the sense of smell. This practice affects the brain centres related to man's most deep rooted instincts and drives. It calms the disturbances and fluctuations of the mind and balances ida and pingala nadis. Perfection of this practice leads directly to meditation.

Practice note: Manduki mudra is an advanced variation of nasikagra drishti. It awakens mooladhara chakra. It should be performed in mild light so that the tip of the nose can be seen.

Note: The word manduki means 'frog'. This mudra is so named because the sitting posture resembles a frog at rest. Manduki mudra is also practiced as a kriya.

TADAGI MUDRA (BARRELLED ABDOMEN TECHNIQUE)



Sit with the legs stretched out in front of the body and the feet slightly apart. The legs should remain straight throughout the practice. Place the hands on the knees, keeping the head and spine straight. Close the eyes and relax the whole body, especially the abdominal area. 460 Lean forward and grasp the big toes with the thumbs, index and second fingers, keeping the head facing forward. Inhale slowly and deeply, expanding the abdominal muscles to their fullest extent. Retain the breath inside for a comfortable length of time without straining the lungs in any way. Exhale slowly and deeply while relaxing the abdomen. Maintain the hold on the the toes. Repeat the breathing up to 10 times. Then release the toes and return to the starting position. This is 1 round.

Duration: Practice 3 to 5 rounds.

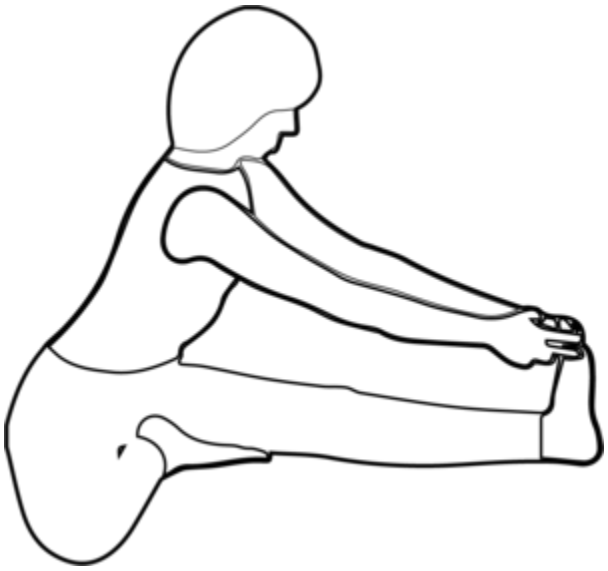
Awareness: Physical - on the abdomen Spiritual - on manipura chakra.

Contra-indications: Pregnant women and those suffering from hernia or prolapse should avoid this practice.

Benefits: Tadagi mudra relieves any tension stored in the diaphragm and pelvic floor, tones the abdominal organs and stimulates blood circulation to these areas. It improves the digestion and helps to alleviate diseases of this region. The nerve plexuses in the visceral area are stimulated and toned. Bending forward and extending the stomach stretches the diaphragm and pelvic floor, and creates pressure throughout the trunk of the body. This stimulates manipura chakra, the centre of energy distribution, and raises the level of prana generally.

Practice note: Release the hold on the toes between breaths if the position becomes uncomfortable. Note: The word tadagi literally means 'water pot', which resembles the shape of the extended abdomen.

MAHA MUDRA (GREAT PSYCHIC ATTITUDE)



Base position: Utthanpadasana (stretched leg pose)

Sit with the legs outstretched. Bend the left knee and press the left heel firmly into the perineum or vulva, the location point of mooladhara chakra. The right leg remains outstretched. Place both hands on the right knee. Adjust the position so that it is comfortable. Bend forward just enough to be able to clasp the right big toe with both hands. Hold the position for a comfortable duration. Return to the upright position with both hands resting on the right knee. This is one round. Practice 3 rounds with the left leg folded, 3 rounds with the right leg folded, then keep both legs outstretched and again practice 3 rounds.

Sit in utthan padasana with the right leg outstretched. Keep the back straight. Relax the whole body. Perform khechari mudra Take a deep breath in. While exhaling, bend forward and clasp the right big toe with both hands. Keep the head erect, and the back as straight as possible, then slowly inhale, tilting the head slightly back. Perform shambhavi mudra and then moola bandha. Hold the breath inside and rotate the awareness from the eyebrow centre, to the throat, to the perineum, mentally repeating, 'ajna, vishuddhi, mooladhara'. The concentration should remain at each chakra for only 1 or 2 seconds. Continue the rotation for as long as the breath can be comfortably held without straining. Release shambhavi and moola bandha. Slowly exhale, returning to the upright position. This is one round. Practice 3 rounds with the left leg folded, 3 rounds with the right leg folded, then keep both legs outstretched and again practice 3 rounds.

Breathing: One round is equivalent to one complete inhalation and exhalation. The longer the breath can be retained the better but do not strain the lungs. The length of the breath should be extended gradually over a period of months and years.

Duration: Beginners may practice 3 rounds with each leg and 3 rounds with both legs. This may be slowly increased to a maximum of 12 rounds each. Mentally count each round as the awareness returns to mooladhara at the end of the round.

Sequence: This practice should ideally be followed by either maha bheda mudra or tadan kriya.

Time of practice: Maha mudra is best practiced in the early morning while the stomach is completely empty and is especially recommended before meditation practices.

Contra-indications: People suffering from high blood pressure or heart complaints should not perform this practice. Maha mudra should not be performed without prior purification of the body. Impurity is indicated by any symptoms of accumulated toxins such as skin eruptions. As the practice of maha mudra generates a lot of heat it should be avoided in hot summers.

Benefits: By the practice of maha mudra the combined benefits of shambhavi mudra, moola bandha and kumbhaka are gained. Digestion and assimilation are stimulated and abdominal disorders are removed. Maha mudra stimulates the energy circuit linking mooladhara with ajna chakra. The whole system is charged with prana which intensifies awareness and induces spontaneous meditation. Mental depression is rapidly eliminated by this practice as energy blockages are removed.

Variation: Siddha/siddha yoni asana may be adopted instead of utthan padasana. Sit with the hands on the knees in jnana or chin mudra and practice in the same way but without bending forward.

Practice note: Before commencing maha mudra, the practitioner should be thoroughly proficient in the techniques of shambhavi, khechari, moola bandha and kumbhaka, and have practiced them for some time. This practice should not be attempted without expert guidance.

Note: The base position for this mudra is the raja yoga version of utthanpadasana.

MAHA BHEDA MUDRA (THE GREAT SEPARATING ATTITUDE)

Sit with the legs outstretched. Assume utthan padasana as described for maha mudra. Keep the back straight. Relax the whole body. Do khechari mudra Take a deep breath in. While exhaling, lean forward and clasp the right big toe with both hands. Retain the breath outside and perform jalandhara, uddiyana and moola bandhas. Rotate the awareness successively from the throat, to the abdomen, to the perineum, mentally repeating, 'vishuddhi, manipura, mooladhara'. The awareness should rest on each chakra for only 1 or 2 seconds and then move to the next in a smooth flow. Rotate the awareness in this manner for as long as is comfortable, retaining the breath outside. Release moola bandha, uddiyana and jalandhara. When the head is fully raised, breathe in and return to the upright postion. This is one round. Immediately exhale and commence the next round. Practice 3 times with the left leg folded, then 3 times with the right leg folded, then 3 times with both legs outstretched.

Duration: As for maha mudra. Do not strain the lungs. Increase the lung capacity gradually over a period of months and years.

Time of practice: Maha bheda mudra is best practiced in the early morning while the stomach is completely empty and is especially recommended before meditation. Contra-indications: As for moola, uddiyana and jalandhara bandhas.

Benefits: As for maha mudra. Maha bheda mudra has a profound influence at a pranic level. It specifically influences mooladhara, manipura and vishuddhi chakras, manipulating and harnessing the energies within them to induce concentration of mind and meditation. Maha bheda supplements and follows maha mudra; together they supercharge the whole bodymind complex.

Practice note: Before commencing this practice, the practitioner should be familiar with the techniques of jalandhara, uddiyana and moola bandhas and bahir kumbhaka. This practice should not be attempted without expert guidance.

MAHA VEDHA MUDRA (THE GREAT PIERCING ATTITUDE)

Sit in padmasana. Relax the body and close the eyes. Place the palms of the hands on the floor beside the thighs with the fingers pointing forward or make fists with the knuckles facing down. The arms should be straight but relaxed. Inhale slowly and deeply through the nose. Retain the breath inside and perform the kriya variation of jalandhara bandha. Raise the body by placing all the weight on the hands and straightening the arms. Gently beat the buttocks on the ground 3 times, keeping the awareness at mooladhara chakra. The spine must be kept straight and jalandhara bandha maintained. The buttocks and the back of the thighs should touch the ground simultaneously. Rest the buttocks on the floor, release jalandhara bandha and exhale slowly and deeply. This is one round. When the breathing returns to normal, inhale and repeat the process.

Breathing: Inhale in the starting position before performing jalandhara bandha. Retain the breath inside while raising and lowering the buttocks. Exhale only after the body has been finally lowered and jalandhara bandha released.

Duration: Practice 3 rounds in the beginning. Over a period of months, gradually increase to a maximum of 11 rounds.

Awareness: Physical - on keeping the spine straight and on touching the floor with the buttocks and thighs together. Spiritual - on mooladhara chakra.

Sequence: Maha vedha should be practiced after maha mudra and maha bheda mudra.

Precautions: Be very careful not to beat the buttocks too hard. It is important to use a thick mat to avoid injury. Do not let the coccyx (tailbone) land directly on the floor. When the backs of the legs and buttocks hit the floor simultaneously, it cushions and distributes the impact over a wide area.

Contra-indications: People who have any inflammatory disease, infection or general complaint in or around the pelvic area should avoid this practice.

Benefits: This is a powerful practice for introverting the mind, awakening psychic faculties and the dormant kundalini which is said to reside in mooladhara chakra. The endocrine system is stimulated by activating the pineal gland. This keeps the pituitary gland under control, regulates hormonal secretions and curtails catabolism, reducing the symptoms of old age.

Practice note: If padmasana has not been mastered this practice cannot be performed properly. However, it can be performed with the legs outstretched, although this method is less effective.

Note: The Sanskrit word maha means 'great' and vedha means 'piercing'. The purpose of maha vedha mudra is to channel the prana accumulated through maha mudra and maha bandha. This technique belongs to hatha yoga and should not be confused with the kriya yoga practice oftadan kriya, which is very similar.

Ashwini Mudra (horse gesture)

Technique I: Rapid contraction

Sit in any comfortable meditation asana. Close the eyes and relax the whole body. Become aware of the natural breathing process for a few minutes, then take the awareness to the anus. Contract the sphincter muscles of the anus for a few seconds without straining, then relax them for a few seconds. Try to confine the action to the anal area. Repeat the practice for as long as possible. Contraction and relaxation should be performed smoothly and rhythmically. Gradually make the contractions more rapid.

Technique 2: Contraction with Antar Kumbhaka

Sit in any comfortable meditation asana. Close the eyes and relax the whole body. Inhale slowly and deeply while simultaneously contracting the anal sphincter muscles. Practice antar kumbhaka (internal breath retention) while holding the contraction of the sphincter muscles. The contraction should be as tight as possible without strain. Exhale while releasing the contraction of the anus. This is one round. Perform as many rounds as is comfortably possible.

Duration: There is no limit to the duration of the practice; beginners, however, should be careful not to strain their muscles. Increase the duration as the anal muscles become stronger and more control is developed.

Awareness: Physical - on the anus. Spiritual - on mooladhara chakra.

Contra-indications: People suffering from anal fistula should avoid this practice.

Benefits: This practice strengthens the anal muscles and alleviates disorders of the rectum such as constipation, piles and prolapse of the uterus or rectum. In such cases, this mudra is most effectively performed in conjunction with an inverted asana, for example, sarvangasana. Perfection of this mudra prevents the escape of pranic energy from the body, redirecting it upward for spiritual purposes.

Practice note: Ashwini mudra is a preparatory practice for moola bandha. At first it is difficult to confine the muscular contraction to the area of the anus; however, this is overcome with practice. Ashwini mudra may be integrated with any asana. Technique 2 may be integrated with nadi shodhana pranayama, the anal contraction being adopted during breath retention.

Note: The word ashwini means 'horse'. The practice is so-called because the anal contraction resembles the movement a horse makes with its sphincter immediately after evacuation of the bowels. 470

Vajroli Mudra (for men)/Sahajoli Mudra (for women) (thunderbolt/spontaneous psychic attitude)

Sit in siddha/siddha yoni asana, or any comfortable meditation posture with the head and spine straight. Place the hands on the knees in chin or jnana mudra. Close the eyes and relax the whole body. Take the awareness to the urethra. Inhale, hold the breath in and try to draw the urethra upward. This muscle action is similar to holding back an intense urge to urinate. The testes in men and the labia in women should move slightly due to this contraction. Try to focus and confine the force of the contraction at the urethra. Bending a little forward during the contraction helps to isolate this point. Hold the contraction for as long as comfortable. Exhale, while releasing the contraction and relax. Practice twice more.

Duration: Hold the contraction for as long as is comfortable, starting with a few seconds and gradually increasing. Begin with 3 contractions and slowly increase up to 10 or 15 rounds.

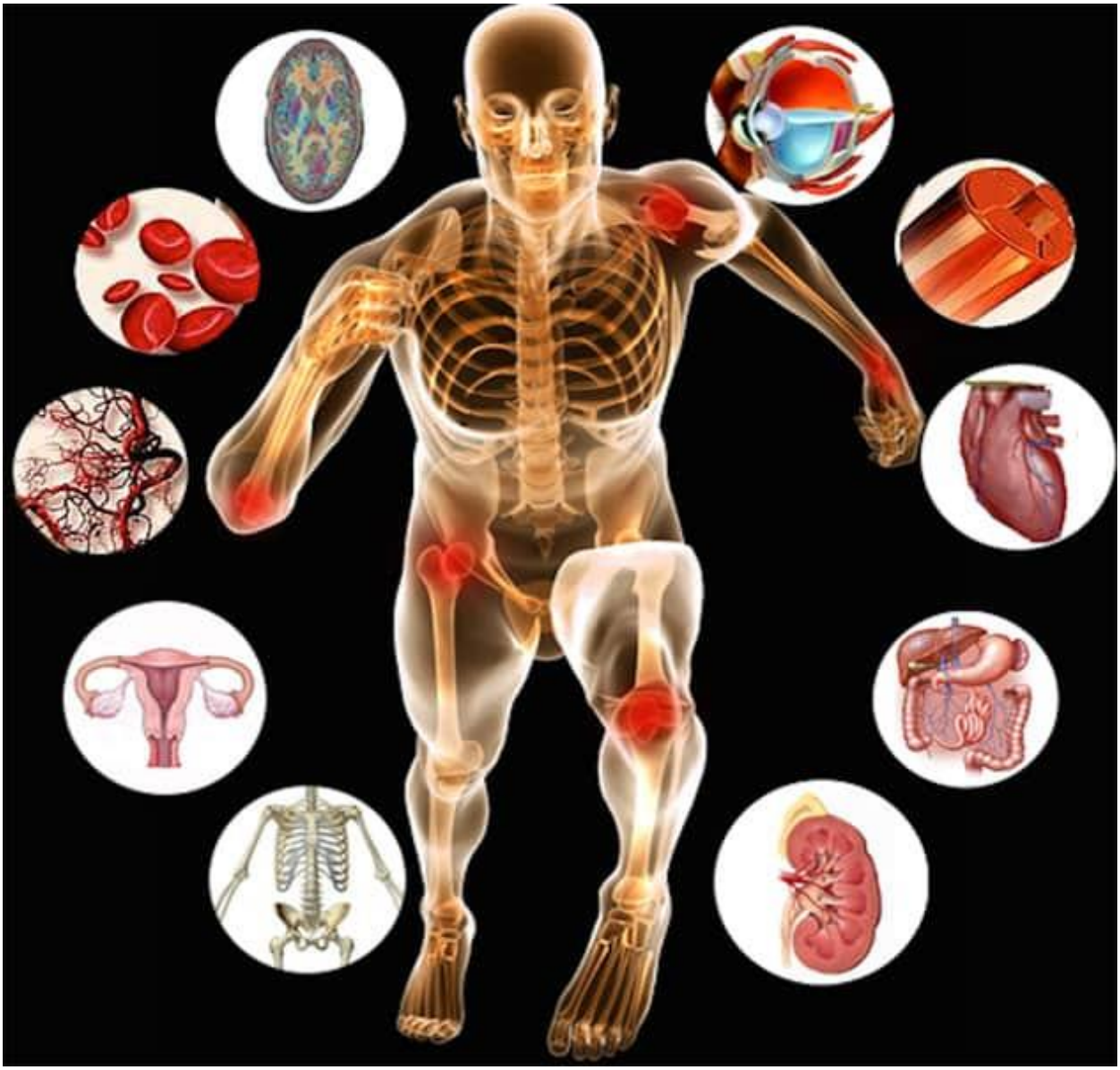
Awareness: Physical - on the isolation of the point of contraction in relation to the genitals, avoiding generalised contraction of the pelvic floor which occurs spontaneously. Spiritual - on swadhisthana chakra.

Time of practice: This mudra may be practiced at any time, preferably when the stomach is empty. Contra-indications: Vajroli/sahajoli mudra should not be practiced by people suffering from urethritis (infection and inflammation of the urethra) as the irritation and pain may increase.

Benefits: Vajroli/sahajoli mudra regulates and tones the entire uro-genital system, correcting incontinence and recurrent 471 urinary tract infections. It also helps overcome psychosexual conflicts and unwanted sexual thoughts. Sahajoli corrects uterine prolapse. Vajroli balances testosterone levels and the sperm count, and gives control over premature ejaculation. It also helps correct impotence by toning the endocrine system and local energy structures. Benign prostatic hypertrophy, a disorder that troubles 80 percent of men in the later part of life, is prevented. Practice note: Isolating the muscles of the urethra takes practice and patience.

Note: The word vajroli is derived from the Sanskrit root vajra which means 'thunderbolt', 'lightning' or 'mighty one', and sahajoli from the root sahaj, meaning 'spontaneous' and oli which means 'to cast up' or 'to fly up'. Vajroli is therefore the force which moves upward with the power of lightning and sahajoli is the psychic attitude of spontaneous arousing. Vajra is the name of the nodi which connects the reproductive organs with the brain.

Anatomy & Physiology



Introduction

Human anatomy is the scientific study of the body's structures. Some of these structures are very small and can only be observed and analyzed with the assistance of a microscope. Other larger structures can readily be seen, manipulated, measured, and weighed. The word "anatomy" comes from a Greek root that means "to cut apart." In order to observe structures in living people, a number of imaging techniques have been developed. These techniques allow clinicians to visualize structures inside the living body such as a cancerous tumor or a fractured bone.

Like most scientific disciplines, anatomy has areas of specialization. Gross anatomy is the study of the larger structures of the body, those visible without the aid of magnification. Macro- means “large,” thus, gross anatomy is also referred to as macroscopic anatomy. In contrast, micro- means “small,” and microscopic anatomy is the study of structures that can be observed only with the use of a microscope or other magnification devices.

Whereas **anatomy** is about structure, **physiology** is about function. Human physiology is the scientific study of the chemistry and physics of the structures of the body and the ways in which they work together to support the functions of life. Much of the study of physiology centers on the body’s tendency toward homeostasis. Homeostasis is the state of steady internal conditions maintained by living things. The study of physiology certainly includes observation, both with the naked eye and with microscopes, as well as manipulations and measurements. However, current advances in physiology usually depend on carefully designed laboratory experiments that reveal the functions of the many structures and chemical compounds that make up the human body.

Like anatomists, physiologists typically specialize in a particular branch of physiology. For example, neurophysiology is the study of the brain, spinal cord, and nerves and how these work together to perform functions as complex and diverse as vision, movement, and thinking. Physiologists may work from the organ level (exploring, for example, what different parts of the brain do) to the molecular level (such as exploring how an electrochemical signal travels along nerves).

Your study of anatomy and physiology will make more sense if you continually relate the form of the structures you are studying to their function. In fact, it can be somewhat frustrating to attempt to study anatomy without an understanding of the physiology that a body structure supports. Imagine, for example, trying to appreciate the unique arrangement of the bones of the human hand if you had no conception of the function of the hand. Fortunately, your understanding of how the human hand manipulates tools—from pens to cell phones—helps you appreciate the unique alignment of the thumb in opposition to the four fingers, making your hand a structure that allows you to pinch and grasp objects and type text messages.

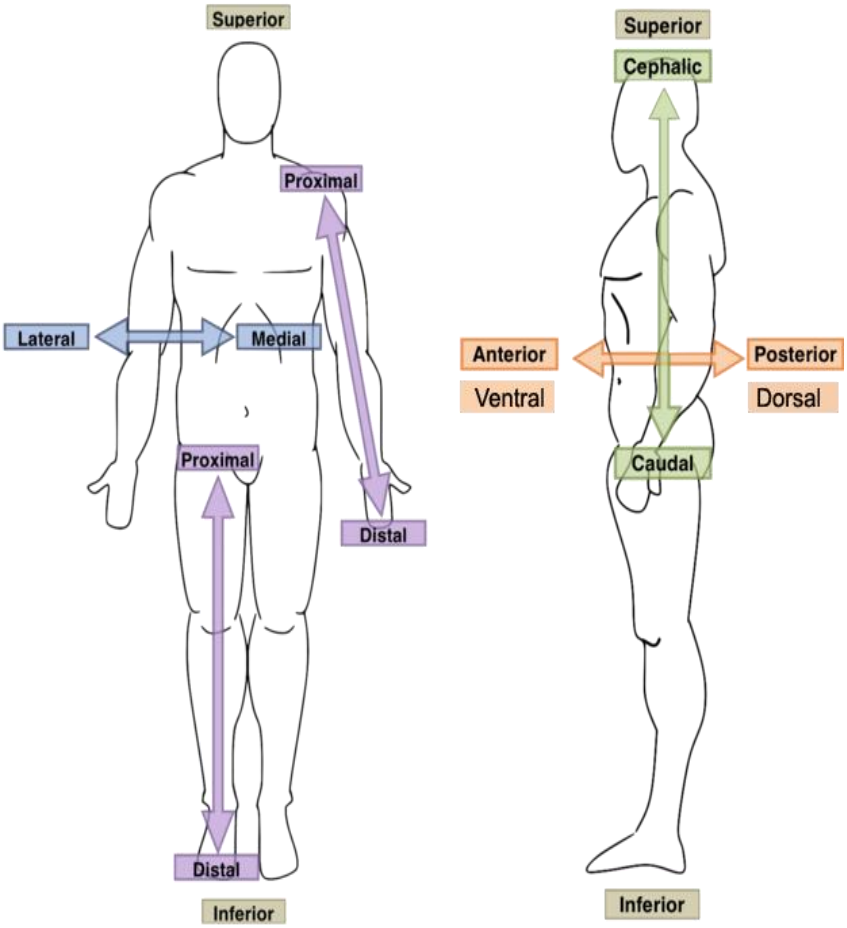
Directional terms of anatomy

Anatomical directional terms are like the directions on a compass rose of a map. Like the directions, North, South, East and West, they can be used to describe the locations of structures in relation to other structures or locations in the body. This is particularly useful when studying anatomy as it provides a common method of communication that helps to avoid confusion when identifying structures.

Also as with a compass rose, each directional term often has a counterpart with converse or opposite meaning. These terms are very useful when describing the locations of structures to be studied in dissections.

Anatomical directional terms can also be applied to the planes of the body. Body planes are used to describe specific sections or regions of the body. Below are examples of some commonly used anatomical directional terms and planes of the body.

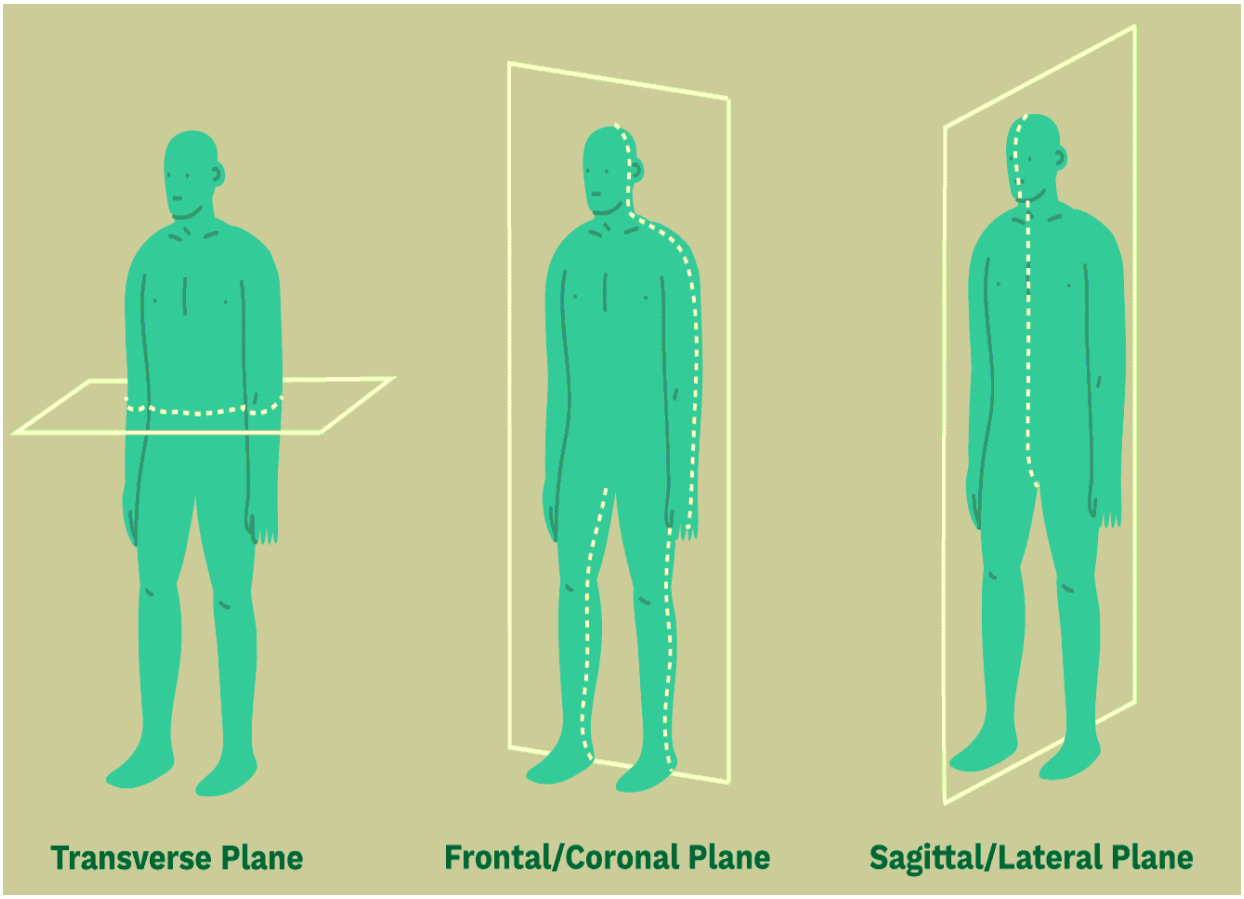
Anatomical Directional Terms



- **Anterior:** In front of, front
- **Posterior:** After, behind, following, toward the rear
- **Distal:** Away from, farther from the origin
- **Proximal:** Near, closer to the origin
- **Dorsal:** Near the upper surface, toward the back
- **Ventral:** Toward the bottom, toward the belly
- **Superior:** Above, over
- **Inferior:** Below, under
- **Lateral:** Toward the side, away from the mid-line
- **Medial:** Toward the mid-line, middle, away from the side
- **Caudal:** Toward the back, toward the tail
- **Axial:** Around a central axis

Anatomical Body Planes

Imagine a person standing in an upright position. Now imagine dissecting this person with imaginary vertical and horizontal planes. This is the best way to describe anatomical planes. Anatomical planes can be used to describe any body part or an entire body. (View a detailed body plane image.)



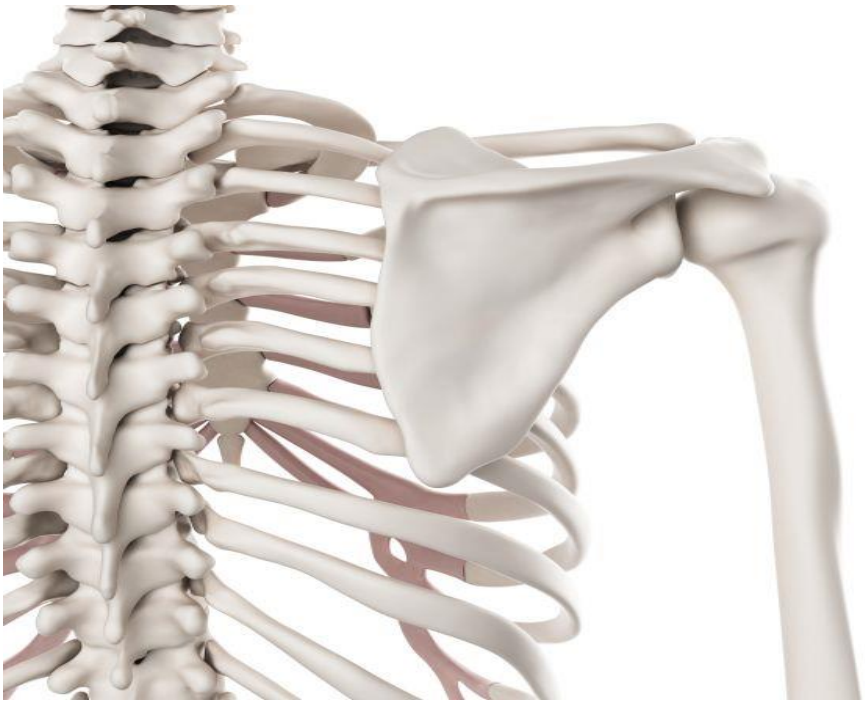
Lateral Plane or Sagittal Plane: Imagine a vertical plane that runs through your body from front to back or back to front. This plane divides the body into right and left regions.

Frontal Plane or Coronal Plane: Imagine a vertical plane that runs through the center of your body from side to side. This plane divides the body into front (anterior) and back (posterior) regions.

Transverse Plane: Imagine a horizontal plane that runs through the midsection of your body. This plane divides the body into upper (superior) and lower (inferior) regions.

Introduction - Skeleton Structure & Functions

Bone or osseous tissue is a hard, dense connective tissue that forms most of the adult skeleton, the support structure of the body. In the areas of the skeleton where bones move (for example, the ribcage and joints), cartilage, a semi-rigid form of connective tissue, provides flexibility and smooth surfaces for movement.



The skeletal system is the body system composed of bones and cartilage and performs the following critical functions for the human body:

- Supports the body
- Facilitates movement
- Protects internal organs
- Produces blood cells
- Stores and releases minerals and fat

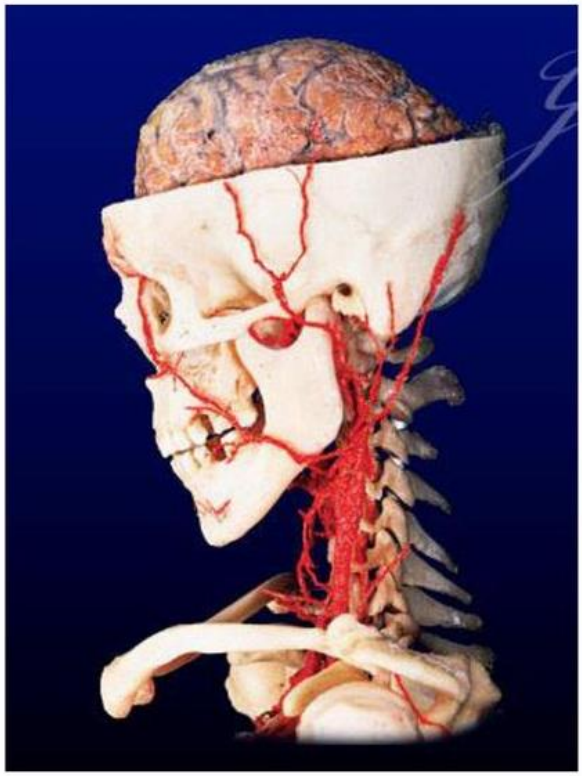
Functions

The most apparent functions of the skeletal system are the gross functions—those visible by observation. Simply by looking at a person, you can see how the bones support, facilitate movement, and protect the human body.

Just as the steel beams of a building provide a scaffold to support its weight, the bones and cartilage of your skeletal system compose the scaffold that supports the rest of your body. Without the skeletal system, you would be a limp mass of organs, muscle, and skin.

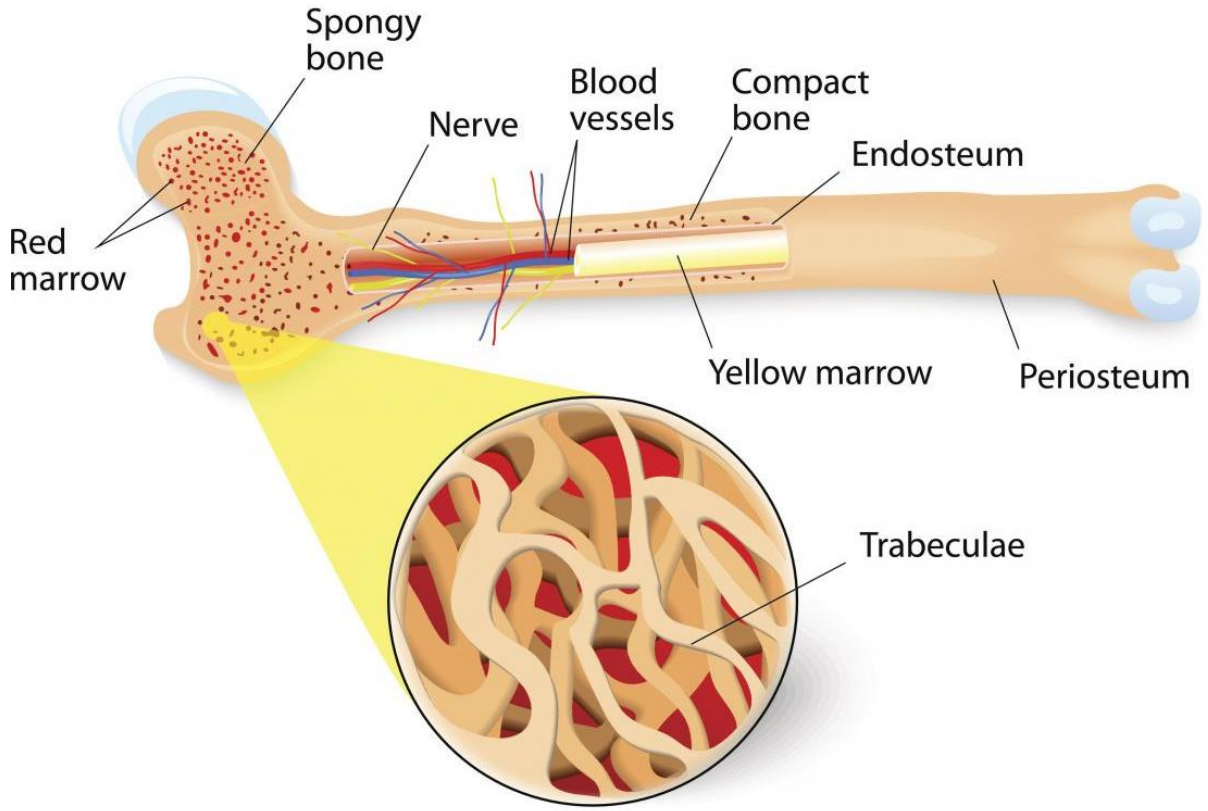
Bones also facilitate movement by serving as points of attachment for your muscles. While some bones only serve as a support for the muscles, others also transmit the forces produced when your muscles contract. From a mechanical point of view, bones act as levers and joints serve as fulcrums. Unless a muscle spans a joint and contracts, a bone is not going to move.

Bones also protect internal organs from injury by covering or surrounding them. For example, your ribs protect your lungs and heart, the bones of your vertebral column (spine) protect your spinal cord, and the bones of your cranium (skull) protect your brain.



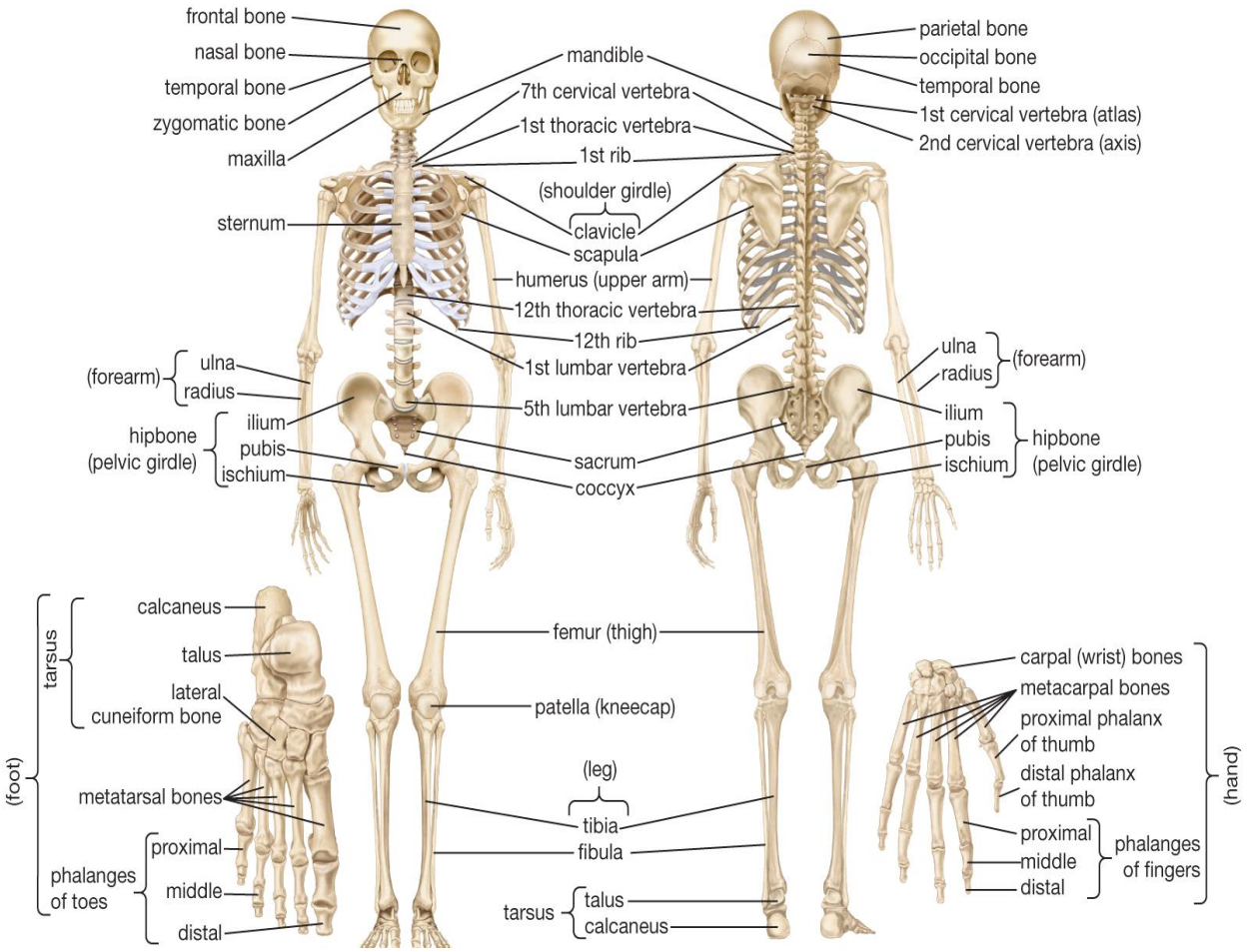
On a metabolic level, bone tissue performs several critical functions. For one, the bone matrix acts as a reservoir for a number of minerals important to the functioning of the body, especially calcium, and phosphorus. These minerals, incorporated into bone tissue, can be released back into the bloodstream to maintain levels needed to support physiological processes. Calcium ions, for example, are essential for muscle contractions and controlling the flow of other ions involved in the transmission of nerve impulses.

Bone Anatomy

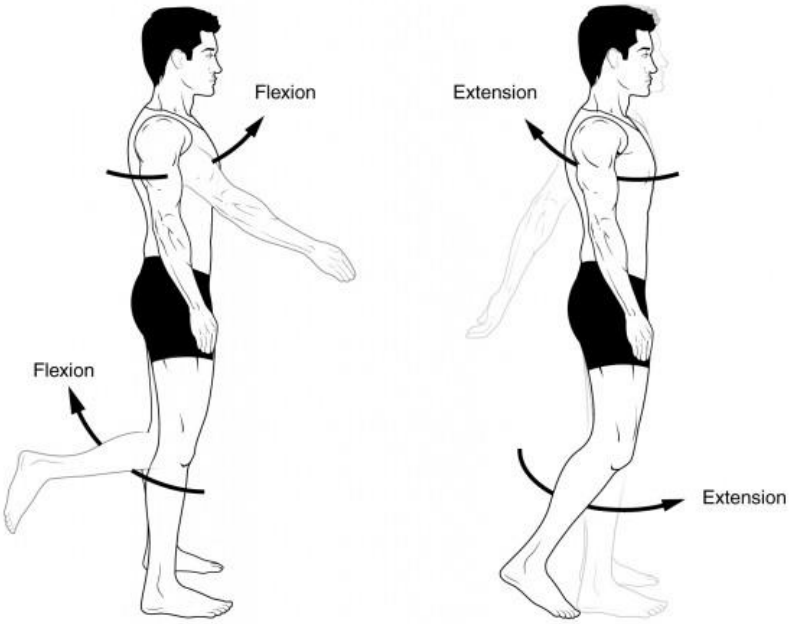


Bone also serves as a site for fat storage and blood cell production. The softer connective tissue that fills the interior of most bone is referred to as bone marrow. There are two types of bone marrow: yellow marrow and red marrow. Yellow marrow contains adipose tissue; the triglycerides stored in the adipocytes of the tissue can serve as a source of energy. Red marrow is where hematopoiesis—the production of blood cells—takes place. Red blood cells, white blood cells, and platelets are all produced in the red marrow.

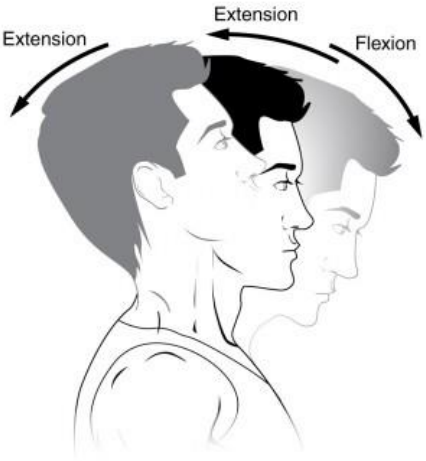
The Human Skeletal System



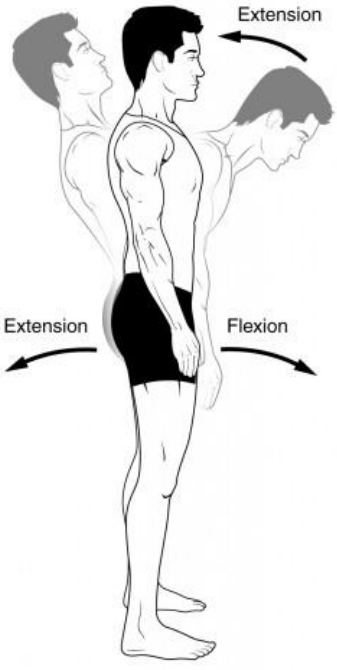
Types of Movements in Joints



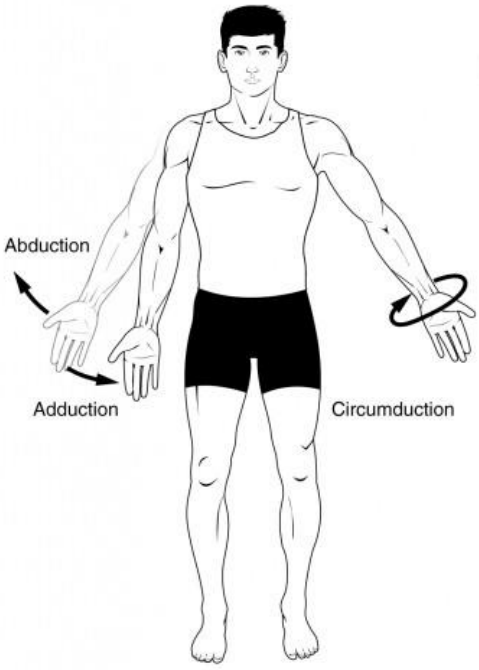
(a) and (b) Angular movements: flexion and extension at the shoulder and knees



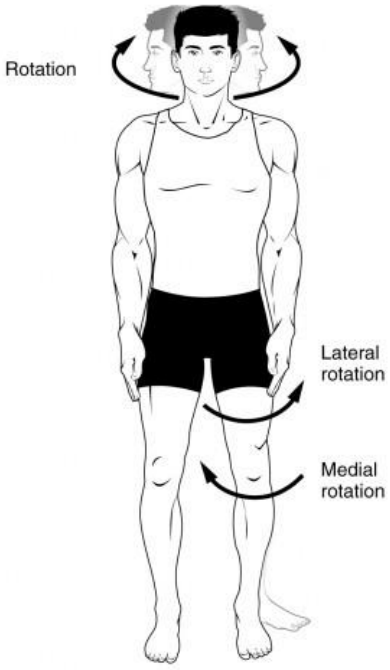
(c) Angular movements: flexion and extension of the neck



(d) Angular movements: flexion and extension of the vertebral column



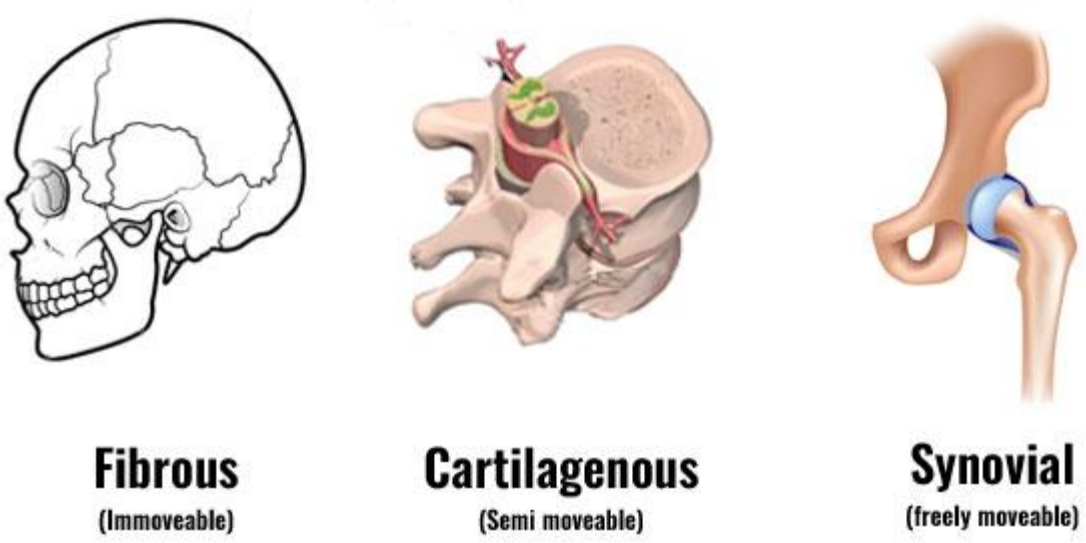
(e) Angular movements: abduction, adduction, and circumduction of the upper limb at the shoulder



(f) Rotation of the head, neck, and lower limb

1. Abduction
2. Adduction
3. Flexion
4. Extension
5. Hyperextension
6. Rotation
7. Circumduction
8. Pronation
9. Supination
10. Protraction
11. Retraction
12. Elevation
13. Depression

Types of Joints in Human Body



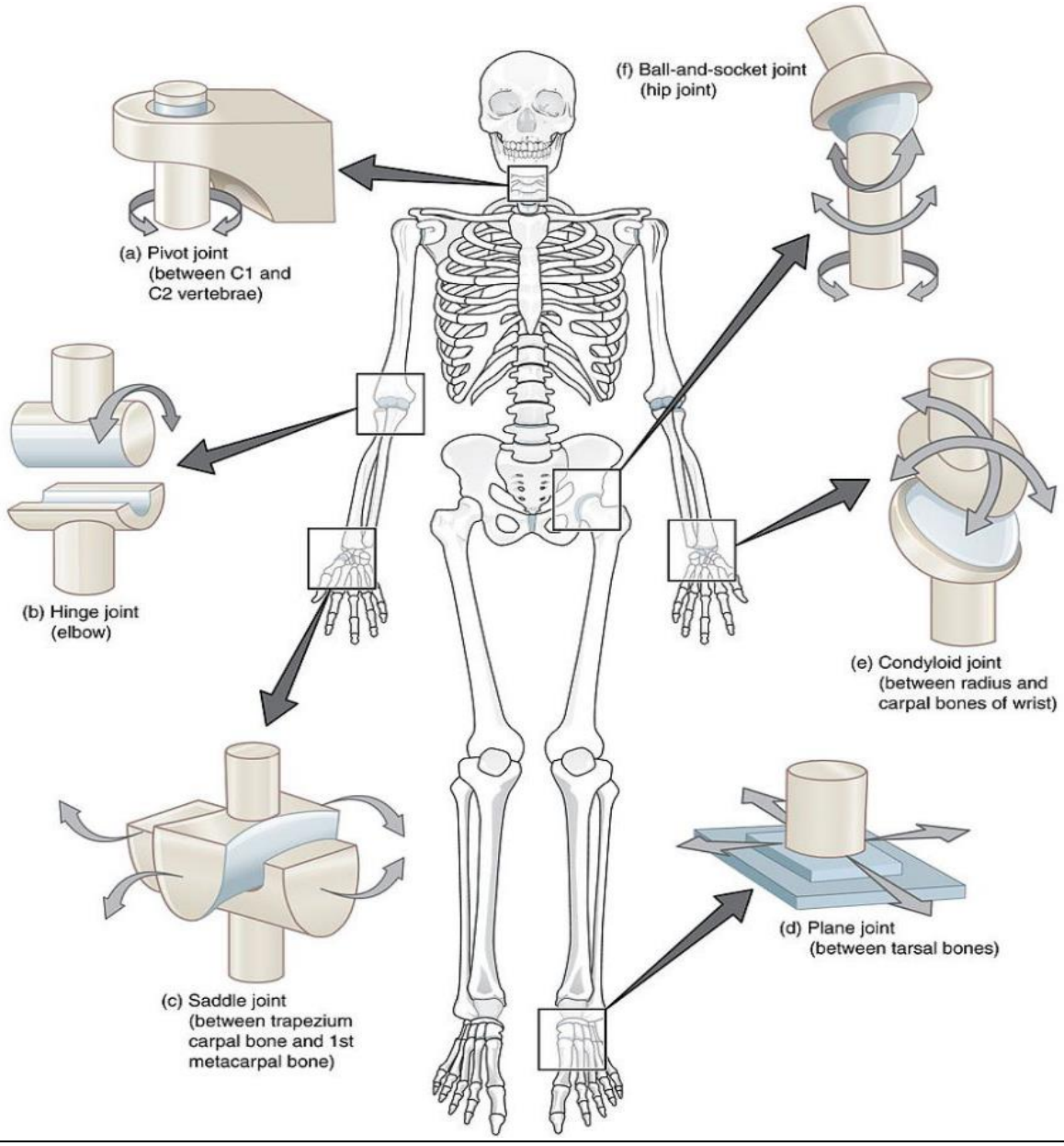
The human body has three main types of joints. They're categorized by the movement they allow:

Immovable- These are fixed or fibrous joints. They're defined as two or more bones in close contact that have no movement. The bones of the skull are an example. The immovable joints between the plates of the skull are known as sutures.

Slightly movable- Also known as cartilaginous joints, these joints are defined as two or more bones held so tightly together that only limited movement can take place. The vertebrae of the spine are good examples.

Freely movable- Also known as synovial joints, these joints have synovial fluid enabling all parts of the joint to smoothly move against each other. These are the most prevalent joints in your body. Examples include joints like the knee and shoulder.

Types of Synovial joints



There are six types of freely movable synovial joints:

Ball and socket joint. Permitting movement in all directions, the ball and socket joint features the rounded head of one bone sitting in the cup of another bone. Examples include your shoulder joint and your hip joint.

Hinge joint. The hinge joint is like a door, opening and closing in one direction, along one plane. Examples include your elbow joint and your knee joint.

Condyloid joint. The condyloid joint allows movement, but no rotation. Examples include your finger joints and your jaw.

Pivot joint. The pivot joint, also called the rotary joint or trochoid joint, is characterized by one bone that can swivel in a ring formed from a second bone. Examples are the joints between your ulna and radius bones that rotate your forearm, and the joint between the first and second vertebrae in your neck.

Gliding joint. The gliding joint is also called the plane join. Although it only permits limited movement, it's characterized by smooth surfaces that can slip over one another. An example is the joint in your wrist.

Saddle joint. Although the saddle joint does not allow rotation, it does enable movement back and forth and side to side. An example is the joint at the base of your thumb.

Cartilage and Connective Tissues

Cartilage is a semi-rigid but flexible avascular connective tissue found at various sites within the body. With a pliable structure composed primarily of water, this tissue type is also extremely tough. Cartilage is found throughout the human body in areas such as the joints, nose, airway, intervertebral discs of the spine, and the ear.

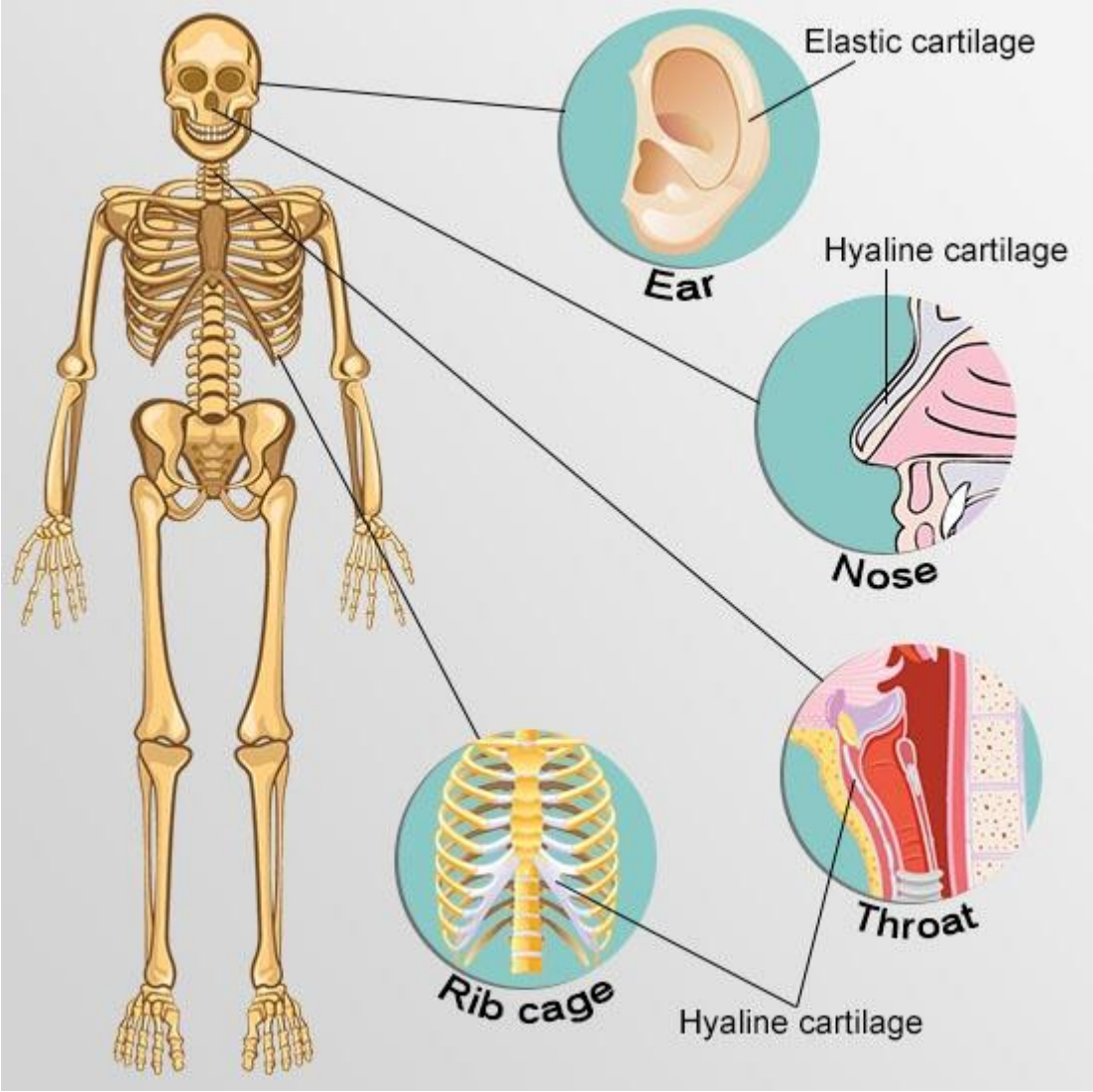
Cartilage function is more than structural, and has different functions in the life cycle. In the embryo, it provides support and is a precursor to bone. Embryonic cartilage either remains as cartilage or provides a substructure for endochondral ossification, meaning it also functions as a template for the rapid growth and development of the musculoskeletal system.

Cartilage is a supple tissue which allows for facial movement as well as providing a lightweight supportive structure in the external ear, and the tip and septum of the nose. In other regions it acts as a shock absorber, cushioning areas where bone meets bone and preventing abrasion and damage. A joint would also not be able to bend without the flexibility of cartilage. A combination of roles is seen in the airways, where cartilage rings around the trachea prevent collapse and damage, and cartilage at the ends of the ribs allows the ribcage to swing upwards and outwards during inspiration. Cartilage also

plays a role in bone repair where, as in the embryo, it provides a template for ossification, this time to broken sections of bone.

Types of Cartilage in Human Body

There are three cartilage types in the human body. Although their components are very similar, the quantities of each component differ, providing different qualities to each type. Accordingly, each type has a particular location.



HYALINE CARTILAGE

The most common form of cartilage is hyaline cartilage. Hyalos is the Greek word for glass, which describes the appearance of this type of connective tissue – translucent, blueish-white, and shiny.

Hyaline cartilage is usually only 2 – 4 mm thick (all cartilage must be thin, as there is no vascularization in this tissue type, and nutrients and oxygen must be obtained through diffusion). It is the embryonic form of cartilage, and also found in the ribs, joints, nose, larynx and trachea.

Hyaline cartilage collagen fibers are primarily type II, extremely thin, and invisible to the microscope due to similar refractory properties to that of the matrix itself.

FIBROCARTILAGE

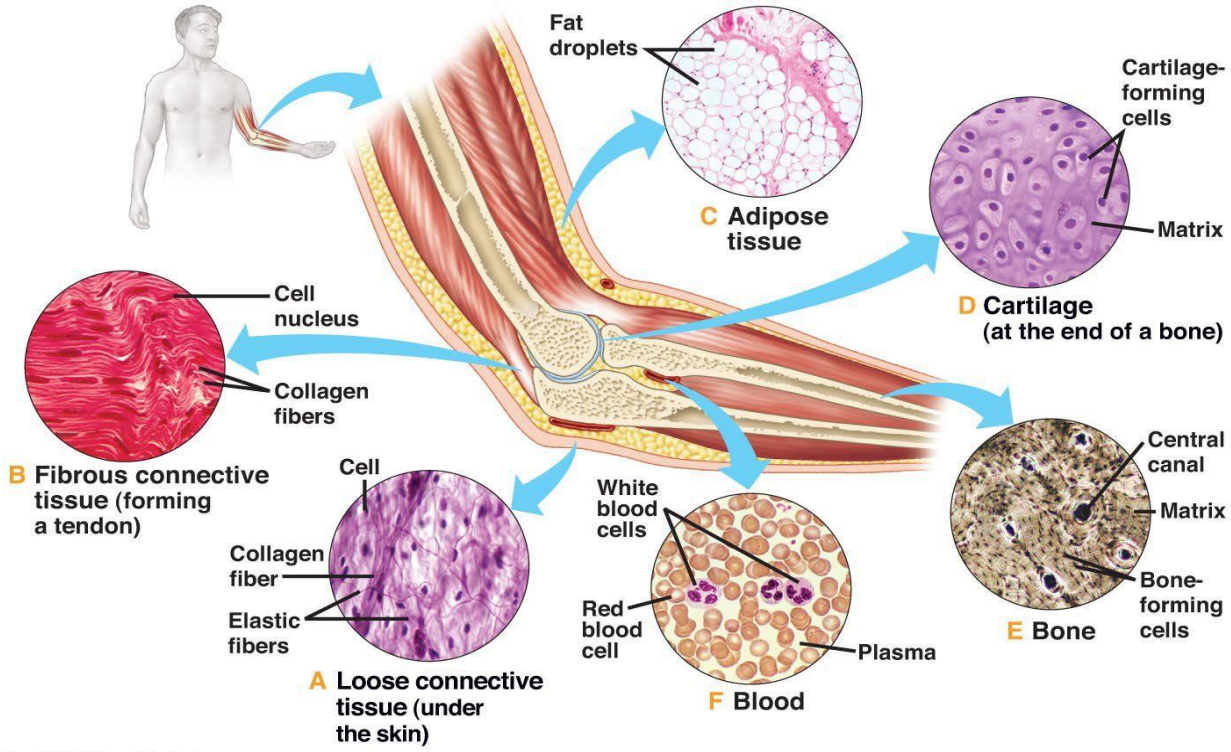
Found where tendons and ligaments meet bone, at the pubic symphysis, in the menisci, the sternoclavicular joint, and the annulus fibrosus (the center of the intervertebral disc), fibrocartilage is a very strong and pliable connective tissue. It is reinforced with collagen fiber bundles that run parallel to each other, allowing a low level of stretch. Because of the abundance of collagen fibers, fibrocartilage is white in appearance. It lacks a perichondrium and is composed of type II and type I collagen fibers. The image below shows the smooth, white horseshoe shape of the fibrocartilaginous menisci.

ELASTIC CARTILAGE

Elastic cartilage is primarily found in the external ear (auricle or pinna), the Eustachian tube, and the epiglottis. These parts of the anatomy are required to always spring back into the original shape. Elastic cartilage's role is purely structural, offering flexibility and resilience due to a mixture of elastic fibers and type II collagen fibers. It is yellow in color, and without the organized structure of fibrocartilage when viewed on a microscope slide.

Connective Tissues

As the name implies, connective tissue serves a connecting function: It supports and binds other tissues in the body. Unlike epithelial tissue, which has cells that are closely packed together, connective tissue typically has cells scattered throughout an extracellular matrix of fibrous proteins and glycoproteins attached to a basement membrane. The primary elements of connective tissue include a ground substance, fibers, and cells.



There are three main groups of connective tissues:

Loose connective tissue holds organs in place and attaches epithelial tissue to other underlying tissues.

Dense connective tissue helps attach muscles to bones and link bones together at joints.

Specialized connective tissue encompasses a number of different tissues with specialized cells and unique ground substances. Some are solid and strong, while others are fluid and flexible. Examples include adipose, cartilage, bone, blood, and lymph.

The ground substance acts as a fluid matrix that suspends the cells and fibers within the particular connective tissue type. Connective tissue fibers and matrix are synthesized by specialized cells called fibroblasts. There are three main groups of connective tissues: loose connective tissue, dense connective tissue, and specialized connective tissue.

LOOSE CONNECTIVE TISSUE

In vertebrates, the most common type of connective tissue is loose connective tissue. It holds organs in place and attaches epithelial tissue to other underlying tissues. Loose connective tissue is named so because of the "weave" and type of its constituent fibers. These fibers form an irregular network with spaces between the fibers. The spaces are filled with ground substance. The three main types of loose connective fibers include collagenous, elastic, and reticular fibers.

Collagenous fibers are made of collagen and consist of bundles of fibrils that are coils of collagen molecules. These fibers help to strengthen connective tissue.

Elastic fibers are made of the protein elastin and are stretchable. They help to give connective tissue elasticity.

Reticular fibers join connective tissues to other tissues.

Loose connective tissues provide support, flexibility, and strength required to support internal organs and structures such as blood vessels, lymph vessels, and nerves.

DENSE CONNECTIVE TISSUE

Another type of connective tissue is dense or fibrous connective tissue, which can be found in tendons and ligaments. These structures help attach muscles to bones and link bones together at joints. Dense connective tissue is composed of large amounts of closely packed collagenous fibers. In comparison to loose connective tissue, dense tissue has a higher proportion of collagenous fibers to ground substance. It is thicker and stronger than loose connective tissue and forms a protective capsule layer around organs such as the liver and kidneys.

Dense connective tissue can be categorized into dense regular, dense irregular, and elastic connective tissues.

Dense regular: Tendons and ligaments are examples of dense regular connective tissue.

Dense irregular: Much of the dermis layer of the skin is composed of dense irregular connective tissue. The membrane capsule surrounding several organs is also dense irregular tissue.

Elastic: These tissues enable stretching in structures such as arteries, vocal cords, the trachea, and bronchial tubes in the lungs.

SPECIALIZED CONNECTIVE TISSUES

Specialized connective tissues include a number of different tissues with specialized cells and unique ground substances. Some of these tissues are solid and strong, while others are fluid and flexible. Examples include adipose, cartilage, bone, blood, and lymph.

Adipose Tissue

Adipose tissue is a form of loose connective tissue that stores fat. Adipose lines organs and body cavities to protect organs and insulate the body against heat loss. Adipose tissue also produces endocrine hormones that influence activities such as blood clotting, insulin sensitivity, and fat storage.

The primary cells of adipose are adipocytes. These cells store fat in the form of triglycerides. Adipocytes appear round and swollen when fat is being stored and shrink as fat is used. Most adipose tissue is described as white adipose which functions in the storage of energy. Both brown and beige adipose burn fat and produce heat.

Cartilage

Cartilage is a form of fibrous connective tissue that is composed of closely packed collagenous fibers in a rubbery gelatinous substance called chondrin. The skeletons of sharks and human embryos are composed of cartilage. Cartilage also provides flexible support for certain structures in adult humans including the nose, trachea, and ears.

There are three different types of cartilage, each with different characteristics.

Hyaline cartilage is the most common type and is found in areas such as the trachea, ribs, and nose. Hyaline cartilage is flexible, elastic, and surrounded by a dense membrane called perichondrium.

Fibrocartilage is the strongest type of cartilage and composed of hyaline and dense collagen fibers. It is inflexible, tough, and located in areas such as between vertebrae, in some joints, and in heart valves. Fibrocartilage does not have perichondrium.

Elastic cartilage contains elastic fibers and is the most flexible type of cartilage. It is found in locations such as the ear and larynx (voice box).

Bone Tissue

Bone is a type of mineralized connective tissue that contains collagen and calcium phosphate, a mineral crystal. Calcium phosphate gives bone its firmness. There are two types of bone tissue: spongy and compact.

Spongy bone, also called cancellous bone, gets its name because of its spongy appearance. The large spaces, or vascular cavities, in this type of bone tissue contain blood vessels and bone marrow. Spongy bone is the first bone type formed during bone formation and is surrounded by compact bone.

Compact bone, or cortical bone, is strong, dense, and forms the hard outer bone surface. Small canals within the tissue allow for the passage of blood vessels and nerves. Mature bone cells, or osteocytes, are found in compact bone.

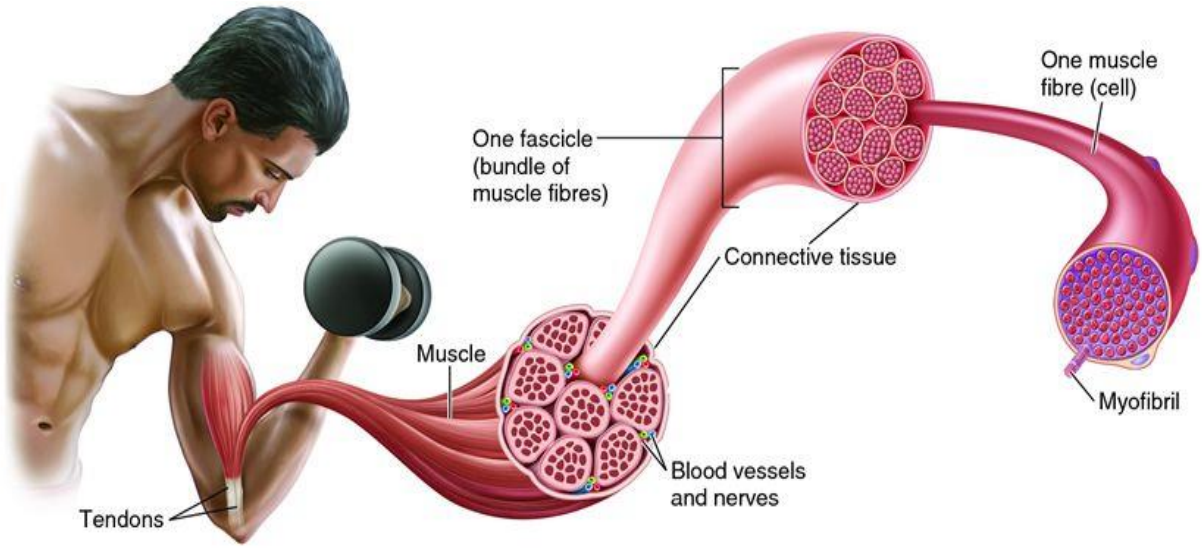
Blood and Lymph

Interestingly enough, blood is considered to be a type of connective tissue. Like other connective tissue types, blood is derived from mesoderm, the middle germ layer of developing embryos. Blood also serves to connect other organ systems together by supplying them with nutrients and transporting signal molecules between cells. Plasma is the extracellular matrix of blood with red blood cells, white blood cells, and platelets suspended in the plasma.

Lymph is another type of fluid connective tissue. This clear fluid originates from blood plasma that exits blood vessels at capillary beds. A component of the lymphatic system, lymph contains immune system cells that protect the body against pathogens. Lymph is delivered back to blood circulation via lymphatic vessels.

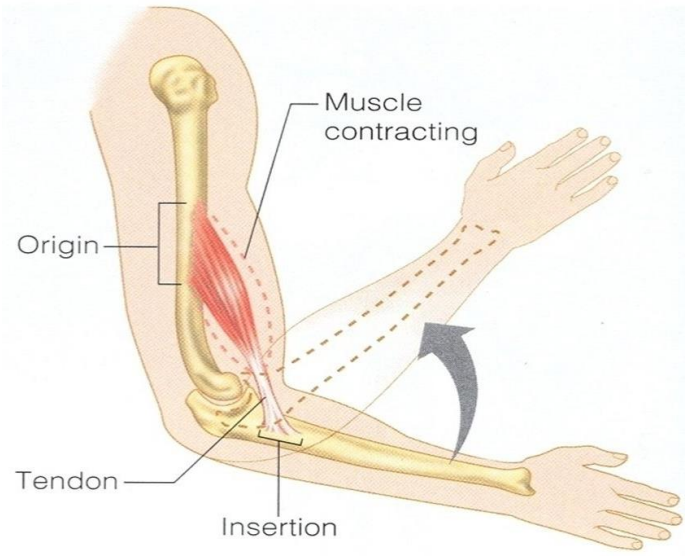
Muscular System and Functions

The muscular system is a set of tissues in the body with the ability to change shape. Muscle cells connect together and eventually to elements of the skeletal system. When the muscle cells contract, force is created as the muscles pull against the skeleton.



Components of a muscle

The muscular system relies on the coordinated action of millions of actin and myosin filaments pulling in the same direction at the same time. To achieve this coordination, muscles are innervated by the nervous system. Nerve signals originating in the brain travel to specific muscles, allowing organisms to stimulate specific muscle tissues to produce coordinated actions like running, swimming, and flying.

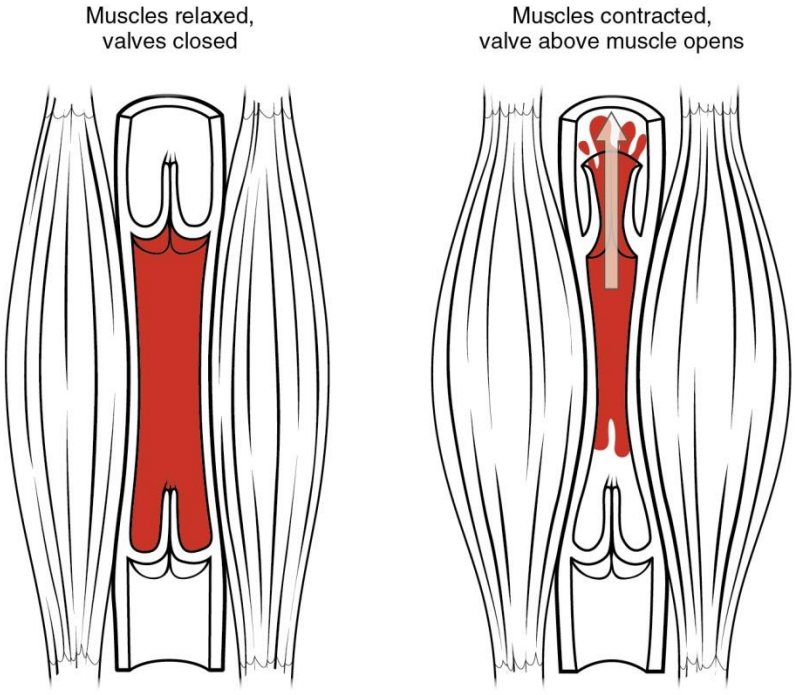


MOVEMENT

The most obvious function of the muscular system is movement. Organisms have adopted a variety of methods to use the contractile function of the muscular system to move through the environment. The most basic movements of fish include contracting muscles on opposite sides of the body in succession. This action propels them through the water.

In organisms with limbs, tendons and other connective tissues are used to secure muscles to the joints and skeleton. Skeletons may be internal like the human skeletons, or they may be external like the exoskeleton of crabs. The nervous system coordinates the contraction of the muscular system to synchronize the movement of the limbs. Animals like the cheetah, swordfish, and bat have obtained speeds above 60 miles per hour or more through the power of their muscles alone.

CIRCULATION



The second and less obvious function of the muscular system is to assist with circulation. Visceral and cardiac muscle tissues surround the blood vessels and lymph vessels that carry crucial nutrients and oxygen to the cells of the body. Cardiac muscle makes up the heart and supplies the main force for blood traveling through the body.

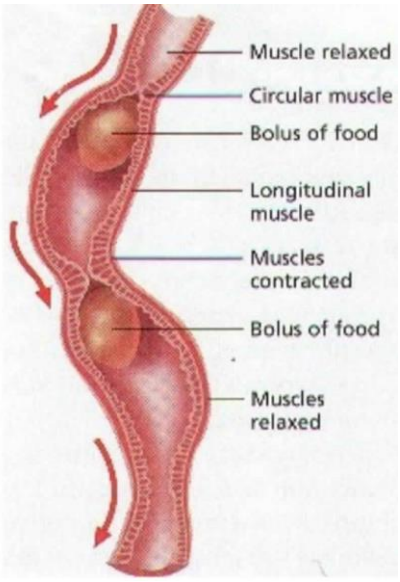
Large arteries and veins have associated muscles which can contract or relax to control blood pressure. The actions of large skeletal muscles also help pump the blood and lymph fluid throughout the body. While you exercise and contract large and small muscles, they push vessels aside, which works like a pump to move fluids around your body.

DIGESTION

Much like its ability to move fluids through vessels in the circulatory system, the muscular system also aids in moving food through the digestive system. Most digestive organs are surrounded by smooth muscle tissue. Although the tissue cannot be voluntarily contracted like skeletal muscles, it is controlled subconsciously. When food needs to be moved through the gut, the muscles contract in a synchronized fashion in a wave through the digestive system. These wave-like muscular contractions are called peristalsis.

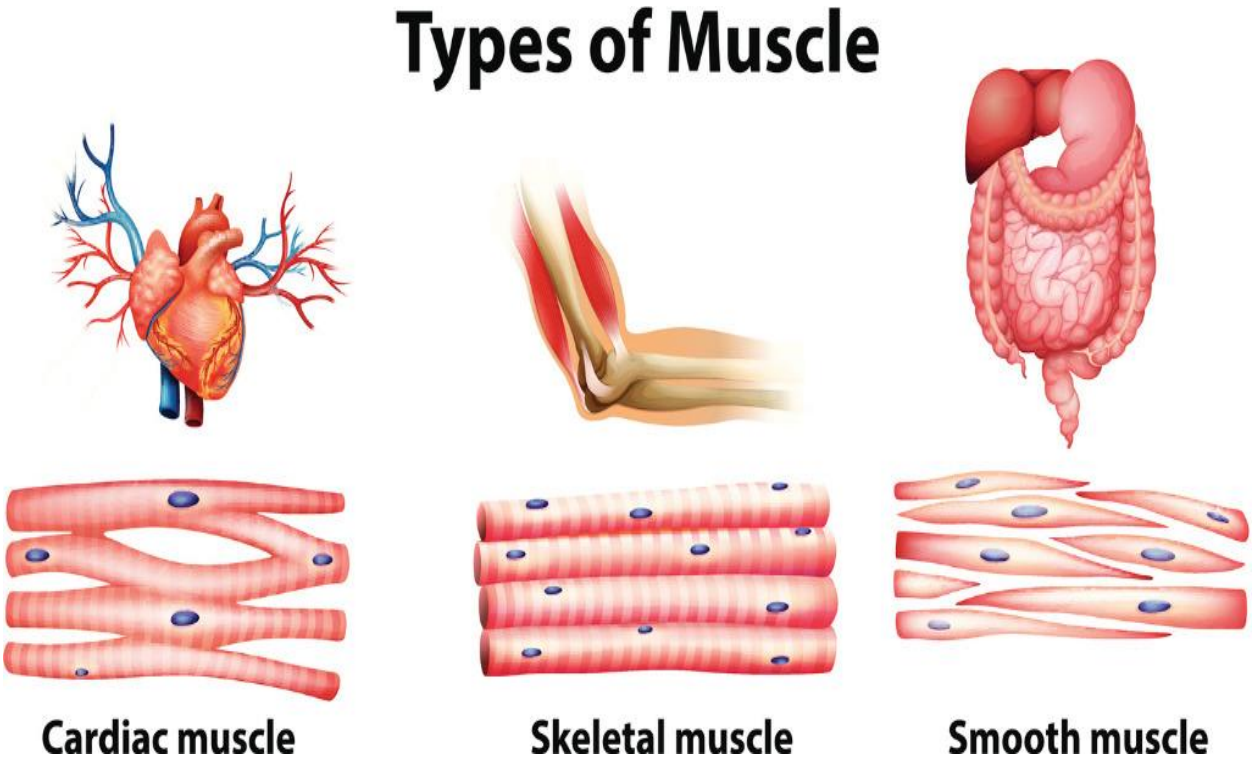
Peristalsis

- series of involuntary wave-like muscle contractions which move food along the digestive tract



Types of Muscle Tissues

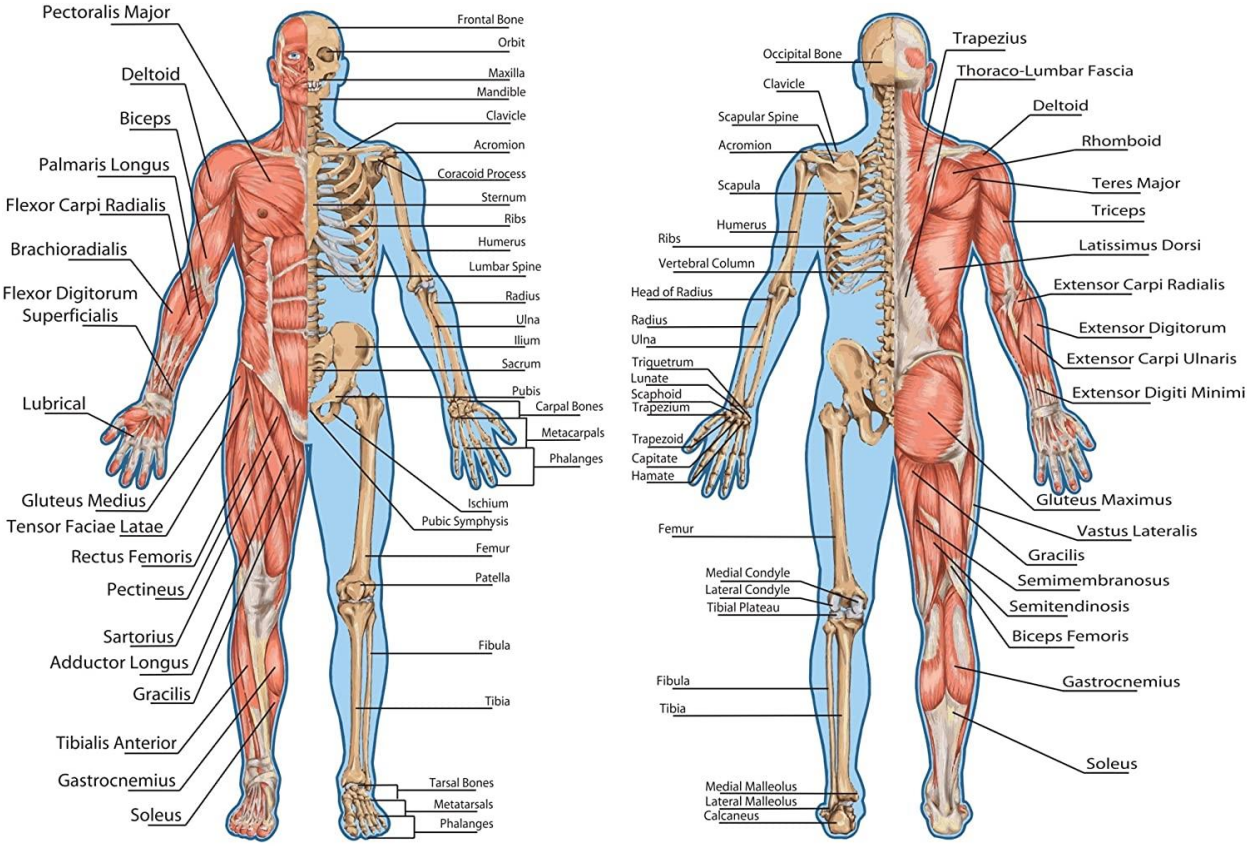
The three types of muscle tissues are such as skeletal, smooth, and cardiac.



The structure of those three muscle tissue is described from its detail level according to the muscle fibers. The muscle fibers are spread through the muscle structures and each part of it binds the cells together. Later, the fibers will allow the muscles to work together as it should be functioned. The functions of each muscle tissues basically depend on the location in your body.

The muscles of the human body that work the skeletal system, that are under voluntary control, and that are concerned with movement, posture, and balance. Broadly considered, human muscle—like the muscles of all vertebrates—is often divided into striated muscle (or skeletal muscle), smooth muscle, and cardiac muscle. Smooth muscle is under involuntary control and is found in the walls of blood vessels and of structures such as the urinary bladder, the intestines, and the stomach. Cardiac muscle makes up the mass of the heart and is responsible for the rhythmic contractions of that vital pumping organ; it too is under involuntary control. With very few exceptions, the arrangement of smooth muscle and cardiac muscle in humans is identical to the arrangement found in other vertebrate animals.

SKELETAL MUSCLE TISSUE



Skeletal muscle tissue is also called striated because the appearance looks complex with both dark and light bands when you see it through the microscope and put the light on it. One skeletal muscle cell is basically long and the shape is like a cylinder. There are many nuclei situated at each edge of the cell.

Skeletal muscle tissue works to move the skeleton under your conscious control such as the movement of fingers, limbs, toes, neck, and so on. It is also in charge of the tissues movement in your facial expression in conscious control as well. Smiling and frowning are just two abilities controlled by the skeletal muscle tissue.

CARDIAC MUSCLE TISSUE

The structure of cardiac muscle fibers is striated yet branched. It also has a single central nucleus. Each fiber is attached to each other in the end so the fibers could be adjoined by the intercalated discs or the thick plasma membranes.

Cardiac muscle tissue is basically pumping the blood through the body to the heart. Other than that, the tissue also works to de-oxygenated the blood through both the right atrium and ventricle to the lungs. Also, it is oxygenated the blood through both the left atrium and ventricle straight to the aorta before spread it to the whole body.

SMOOTH/VISCERAL MUSCLE TISSUE

The structure is exceptionally different from the two previous types. The tissue is not striated and they are tapered yet so small and each end is getting smaller – very different than the skeletal muscle that looks like a cylinder. Each fiber of the smooth muscle has one since the nucleus that located in the central.

This tissue is specifically important when it comes to the digestive system. The smooth muscle contraction constricts the vessel in the middle. In action, it helps to move the foods through the gastrointestinal tract. Later, the muscle will break the food down below for further process. The muscles also contribute to moving the fluid through the whole body and the process of elimination from the gastrointestinal system.

Properties of Skeletal Muscles

All muscle cells share several properties: contractility, excitability, extensibility, and elasticity:

EXCITABILITY

For a muscle to contract and do work, its cells must be stimulated, most often by the nerves supplying them. Nervous impulses cause the release of the neurotransmitter acetylcholine at the nerve-muscle junction, and the acetylcholine activates receptors on the surface of the muscle cell. This results in an influx of positively charged sodium ions into the muscle cell and a depolarization of the muscle cell membrane, which in the resting state is quite negatively charged. If the membrane becomes sufficiently

depolarized, an action potential results; the muscle cell is then "excited" from an electrochemical standpoint.

CONTRACTILITY

In the case of skeletal muscles, muscle cells contract when stimulated by neural input; smooth and cardiac muscles do not require this input. When a muscle cell is excited, the impulse travels along various membranes of the cell to its interior, where it leads to the opening of calcium channels. Calcium ions flow toward and bind to a protein molecule called troponin, leading to sequential changes in shape and position of the associated proteins tropomyosin, myosin and actin. The upshot is that myosin binds to small strands within the cell called myofilaments and pulls them along, causing the cell to shorten, or contract. Since this is going on simultaneously and in a coordinated fashion in many thousands of myocytes at the same time, the muscle as a whole contracts.

EXTENSIBILITY

Most of your body's cells lack the capacity to stretch; attempting to do so only damages or destroys them. Your long, cylindrical muscle cells, however, are a different story. Muscle cells contract, and in order for them to retain this ability, they must accordingly possess extensibility, or the capacity to lengthen. Your muscle cells can be stretched to about three times their contracted length without rupturing. This is important because in a lot of coordinated movements, so-called antagonistic muscles operate such that one is lengthening while the other is contracting. For example, when you run, the hamstring in the back of your thigh contracts while your quadriceps are extended and conversely.

ELASTICITY

When something is described as elastic, this is simply a statement that it can be stretched or contracted by some amount above or below its resting or default length without damaging it, and that it will return to this resting length once the stimulus for stretching or contraction is removed. Your muscles require the property of elastic recoil for them to be able to do their jobs. If, say, your biceps muscles failed to recoil to their resting length after being stretched during a series of curling exercises, they would become slack, and slack muscles with no tension are unable to generate any force and are therefore useless as levers.

ADAPTABILITY

Human body is an amazing unit. Not only does it have a mind of its own, it also adapts to it with the actual mind’s instructions. One of the most valid property of muscles is adaptability. Involuntary muscles have the ability to adapt to any routine they are exposed to over a period of time. It is a known fact that muscles respond to stimulation in the form of aerobics or weight trainings differently. Depending on the level and kind of exertion you’re putting your muscles under, they will adapt and respond to it. For instance, a runner will have a lean set of muscles which will remain active while a weight lifter will have a bulky set of muscles because of the habit of lifting heavy weights. This property of muscles is known as Hypertrophy. On the contrary, a person who is not giving his or her muscles

enough workout or stimulation as required, the muscles will start losing their size, strength, and flexibility. This property of muscles in known as Atrophy. Depending on the activity the muscles are exposed to they adapt and respond.

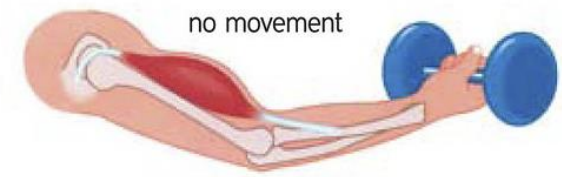
Muscle Contractions and Their Types

It is essential to understand the types of muscle contraction in order to derive the maximum benefits from them. There are four types of contractions- isotonic, isometric, eccentric contractions. They all differ from one another. While in some the muscle lengthens in other the muscle shortens depending upon the tension provided. These are effective in body building, treating arthritis.

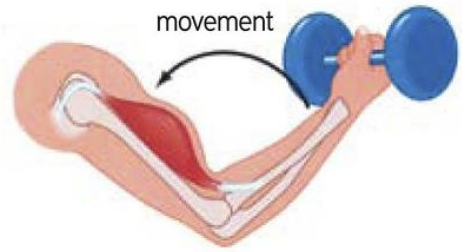
The exercises which you perform have their own benefits like keeping you fit and healthy, preventing various diseases like diabetes, kidney ailments, obesity and many more such diseases. But what is common amongst all such exercises is that they all require particular types of muscle contractions.

Basically there are three types of muscle contractions. These include the following:

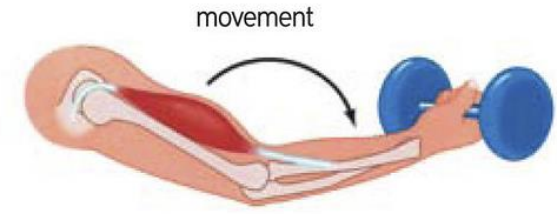
a) Isometric contraction - muscles contract but do not shorten



b) Concentric contraction - muscles contract and shorten to lift the weight



c) Eccentric contraction - muscles contract but lengthen to control the lowering of the weight



CONCENTRIC CONTRACTION

In this type of contraction, movement takes place and this occurs when you use your muscles to push or pull an object. Basically all types of lifting exercises require such type of contraction and hence it assumes importance. This occurs when on contraction the muscle shortens. The isotonic contractions are said to be the most common type of contractions. Some of the common examples may include- sit ups, throwing a ball, when you lift the objects above the head. This contraction is also vivid when you flex the bicep muscle.

ECCENTRIC CONTRACTION

This is said to be just the opposite of isotonic contraction. In this the muscle will lengthen down once its gains tensions. They are less common and also not very fruitful from the point of view of exercises. In the eccentric contraction, the muscles that have lengthened

will be serving as agonists and hence are likely to perform all the work.

ISOMETRIC CONTRACTION

Here the length of the muscle remains the same, there is no tension in this contraction and thereby no movement of the muscles, it is for the same reason that it is also called as the static contraction. The body builders basically make use of this type of contraction. In order to create an isometric contraction you need to create the biceps curl against the immovable objects.

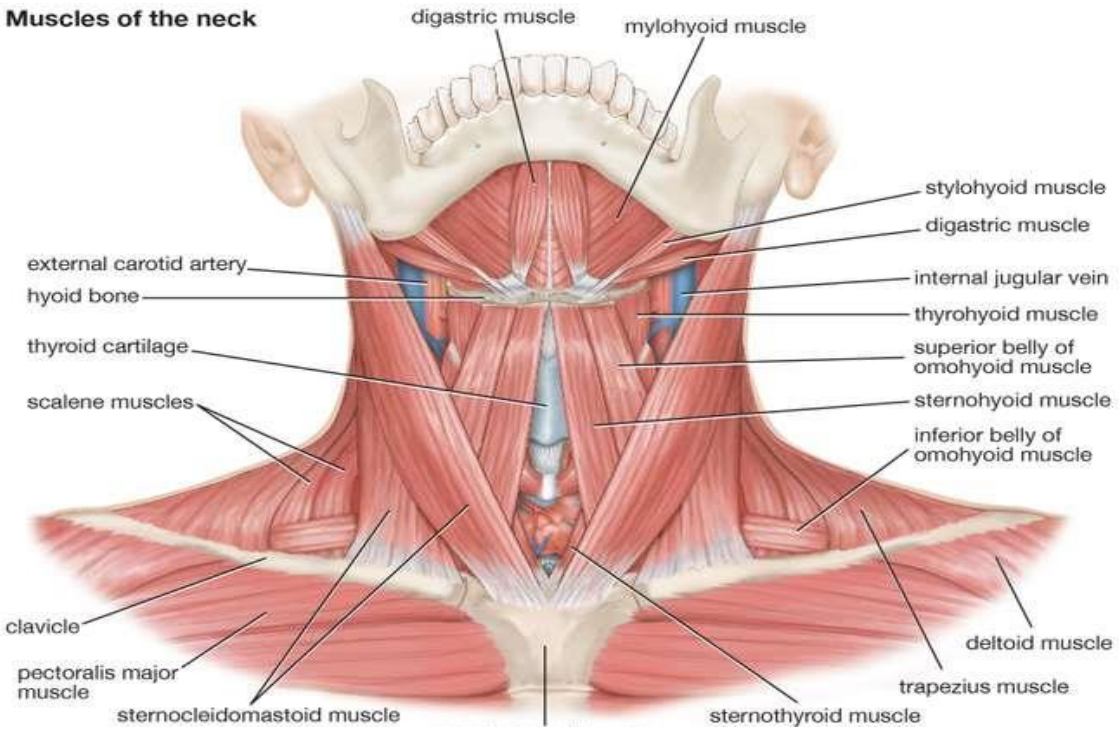
This type of contraction is recommended in case of inflammatory joint and when it has been rendered immovable. This contraction is suggested by the rehabilitation experts in such a case.

It needs to be understood that Isometric movement is primarily beneficial for those who are suffering from arthritis.

Major muscles of Skeletal Muscles

The following sections provide a basic framework for the understanding of gross human muscular anatomy, with descriptions of the large muscle groups and their actions. The various muscle groups work in a coordinated fashion to control the movements of the human body.

THE NECK



Muscles of the neck

The motion of the neck is described in terms of rotation, flexion, extension, and side bending (i.e., the motion used to touch the ear to the shoulder). The direction of the action can be ipsilateral, which refers to movement in the direction of the contracting muscle, or contralateral, which refers to movement away from the side of the contracting muscle.

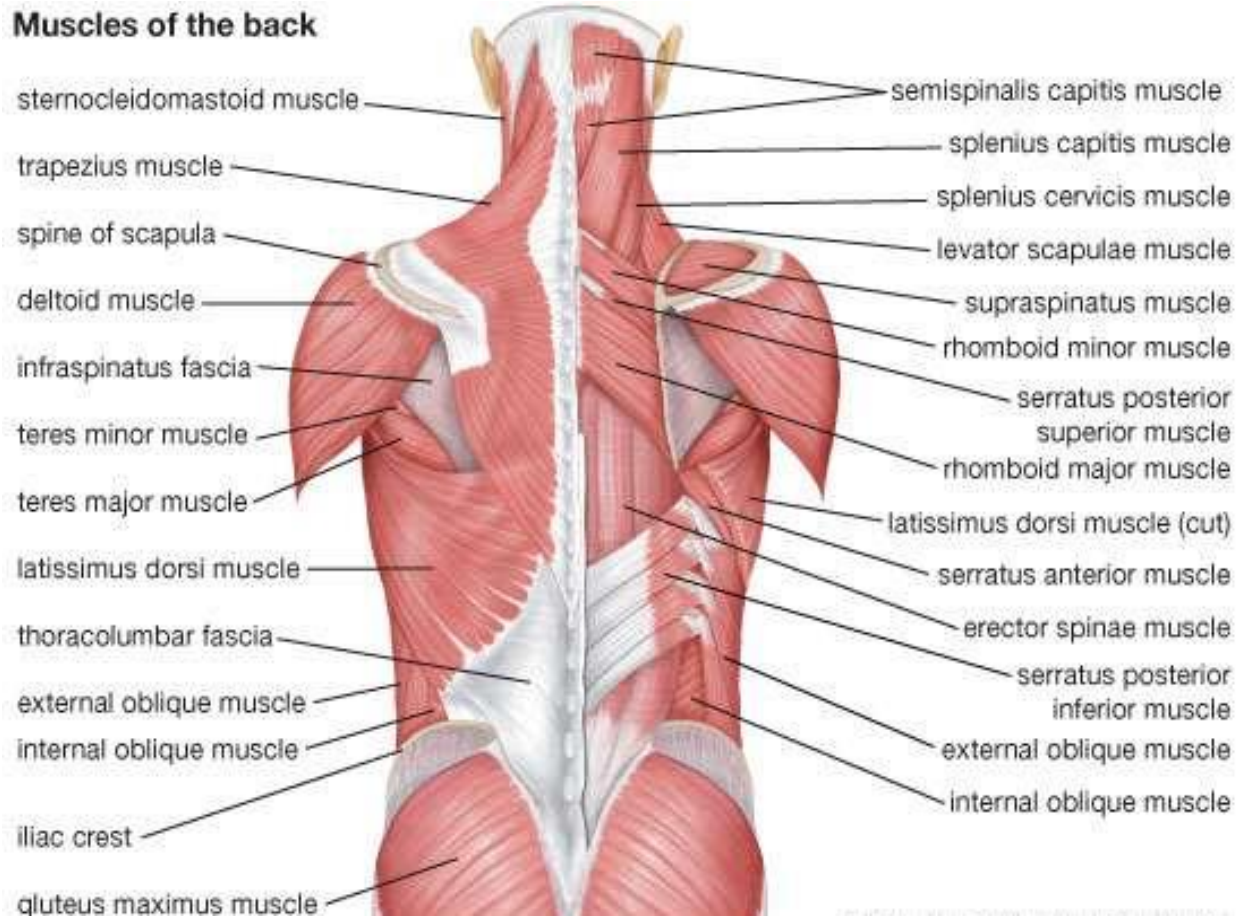
Rotation is one of the most-important actions of the cervical (neck) spine. Rotation is accomplished primarily by the sternocleidomastoid muscle, which bends the neck to the ipsilateral side and rotates the neck contralaterally. Together, the sternocleidomastoid muscles on both sides of the neck act to flex the neck and raise the sternum to assist in forced inhalation. The anterior and middle scalene muscles, which also are located at the sides of the neck, act ipsilaterally to rotate the neck, as well as to elevate the first rib. The splenius capitis and splenius cervicis, which are located in the back of the neck, work to rotate the head.

Side bending also is an important action of the cervical spine. The sternocleidomastoid muscles are involved in cervical side bending. The posterior scalene muscles, located on the lower sides of the neck, ipsilaterally bend the neck to the side and elevate the second rib. The splenius capitis and splenius cervicis also assist in neck side bending. The erector spinae muscles (iliocostalis, longissimus, and spinalis) are large, deep muscles that extend the length of the back. All three act to ipsilaterally side bend the neck.

Neck flexion refers to the motion used to touch the chin to the chest. It is accomplished primarily by the sternocleidomastoid muscles, with assistance from the longus colli and the longus capitis, which are found in the front of the neck. Neck extension is the opposite of flexion and is accomplished by many of the same muscles that are used for other neck movements, including the splenius cervicis, splenius capitis, iliocostalis, longissimus, and spinalis muscles.

THE BACK

The back contains the origins of many of the muscles that are involved in the movement of the neck and shoulders. In addition, the axial skeleton that runs vertically through the back protects the spinal cord, which innervates almost all the muscles in the body.

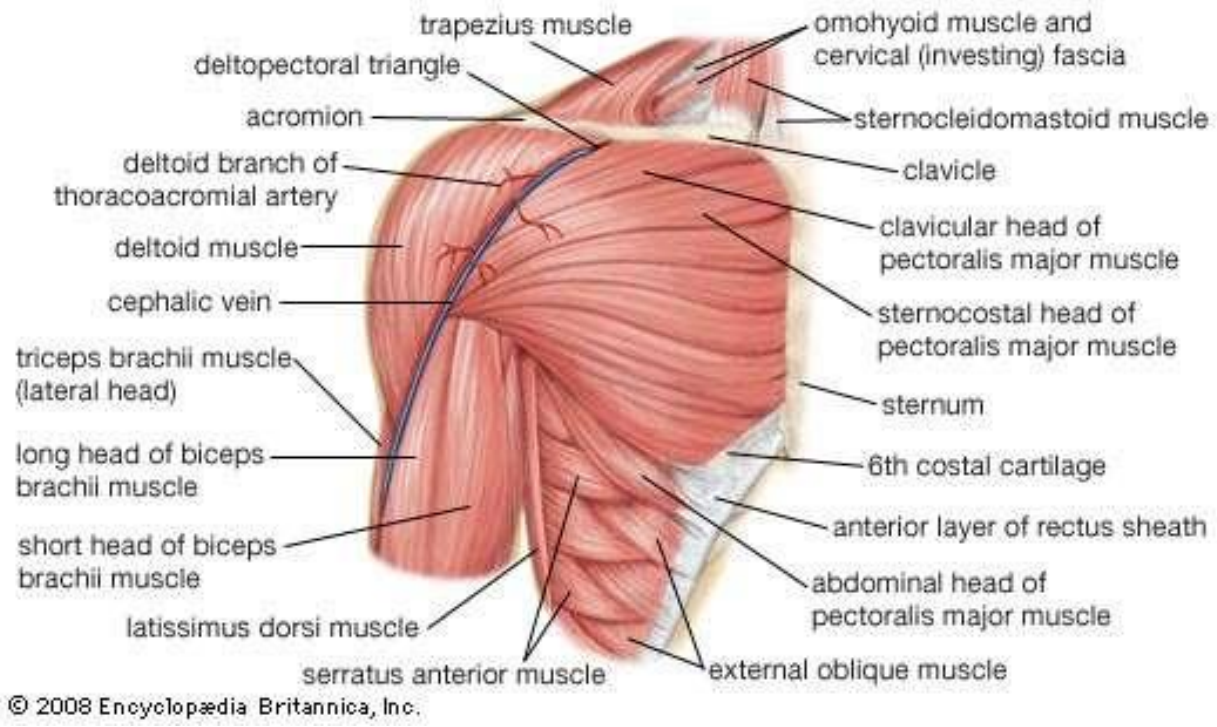


Muscles of the back

Multiple muscles in the back function specifically in movements of the back. The erector spinae muscles, for example, extend the back (bend it backward) and side bend the back. The semispinalis dorsi and semispinalis capitis muscles also extend the back. The small muscles of the vertebrae (the multifidi and rotators) help rotate, extend, and side bend the back. The quadratus lumborum muscle in the lower back side bends the lumbar spine and aids in the inspiration of air through its stabilizing affects at its insertion at the 12th rib (the last of the floating ribs). The scapula (shoulder blade) is elevated by the trapezius muscle, which runs from the back of the neck to the middle of the back, by the rhomboid major and rhomboid minor muscles in the upper back, and by the levator scapulae muscle, which runs along the side and back of the neck.

THE SHOULDER

The shoulder is a complex ball-and-socket joint comprising the head of the humerus, the clavicle (collarbone), and the scapula. The shoulder's main motions are flexion, extension, abduction, adduction, internal rotation, and external rotation.



Muscles of the shoulder

Shoulder flexion is movement of the shoulder in a forward motion. An example of shoulder flexion can be seen when reaching forward to grasp an object. That action is accomplished primarily by the combined actions of the deltoid muscle in the uppermost extent of the arm, the pectoralis major muscle in the chest, the coracobrachialis muscle on the inside of the upper arm, and the biceps brachii muscles on the front of the upper arm.

Extension of the shoulder is opposite to flexion. Pure shoulder extension is the movement of the arm directly behind the body, as in receiving a baton in a relay race. That movement is accomplished by the actions of the deltoid muscle, the latissimus dorsi muscle in the back, the teres major muscle in the armpit area, and the triceps muscle in the back of the upper arm. The triceps, as the name suggests, consists of three heads that originate from different surfaces but share the same insertion at the olecranon process of the ulna (a bone in the forearm); the three heads together act to extend the elbow.

Shoulder adduction and abduction serve to lower the arm toward and lift the arm away from the body, respectively. They can be visualized by picturing someone doing jumping jacks. Adduction is

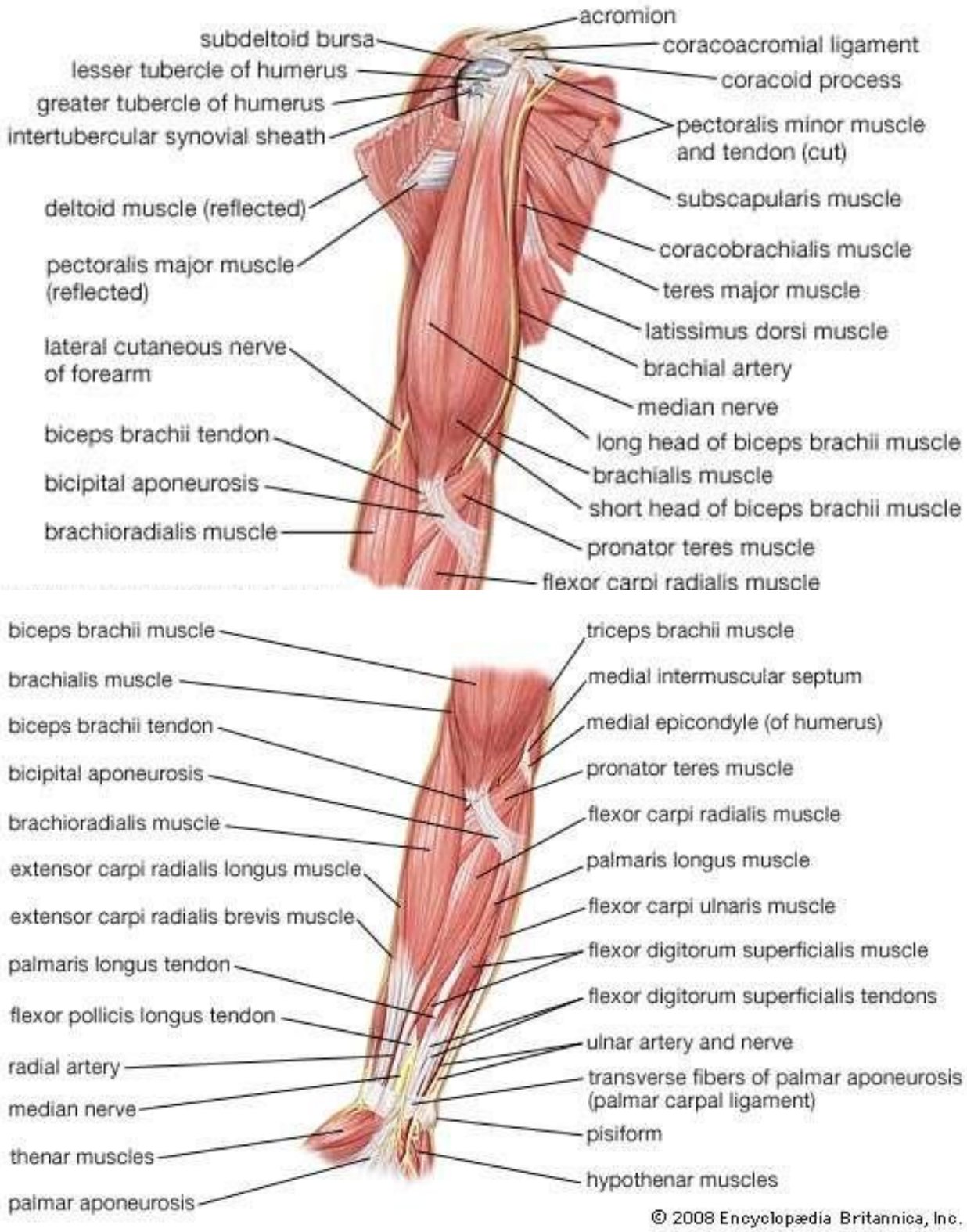
accomplished primarily by the pectoralis major, latissimus dorsi, teres major, triceps, and coracobrachialis. The deltoid and the supraspinatus, a muscle that runs along the scapula in the back, are the two main abductors of the shoulder.

An example of external rotation of the shoulder is seen in a tennis backhand stroke. External rotation is attributed primarily to the deltoid, the teres minor in the armpit area, and the infraspinatus muscle, which covers the scapula. Internal rotation of the shoulder is the opposite of external rotation. An example is the shoulder movement that occurs when reaching into a back pocket. That movement is achieved through the coordinated action of the pectoralis major, latissimus dorsi, deltoid, teres major, and subscapularis muscles. (The subscapularis is a deep muscle situated on the anterior, or front-facing, surface of the scapula.)

The teres minor, subscapularis, supraspinatus, and infraspinatus muscles together form the rotator cuff, which stabilizes the humeral head (the ball portion of the ball-and-socket shoulder joint). The muscles of the rotator cuff are common sites of injury in adults, particularly among people who perform overhead motions repeatedly (e.g., throwing a baseball or painting a ceiling). Several of the rotator cuff muscles have tendons that run under the acromion, a bony prominence at the distal end of the scapula. (The term distal describes a relative position away from the centre of the body; it often is contrasted with the term proximal, which describes a relative position near to the centre of the body.) The position of the tendons and of the subacromial bursae (fluid-filled sacs located beneath the acromion) leaves them vulnerable to compression and pinching, which can result in an injury known as shoulder impingement syndrome.

THE ARM

In addition to aiding the movement of the shoulder, the muscles of the upper arm produce various movements of the forearm. For example, the primary muscles involved in forearm flexion, in which the angle formed at the elbow becomes smaller (i.e., the hand moves closer to the shoulder), are the biceps brachii, the brachialis (situated beneath the biceps brachii in the upper arm), and the brachioradialis (the origin of which is on the humerus). Minor contributions to forearm flexion are provided by the coracobrachialis and by flexor muscles situated in the anterior compartment of the forearm (the palm side of the forearm; also known as the flexor compartment), including the pronator teres, the flexor carpi radialis, the flexor digitorum superficialis, the palmaris longus, and the flexor carpi ulnaris.

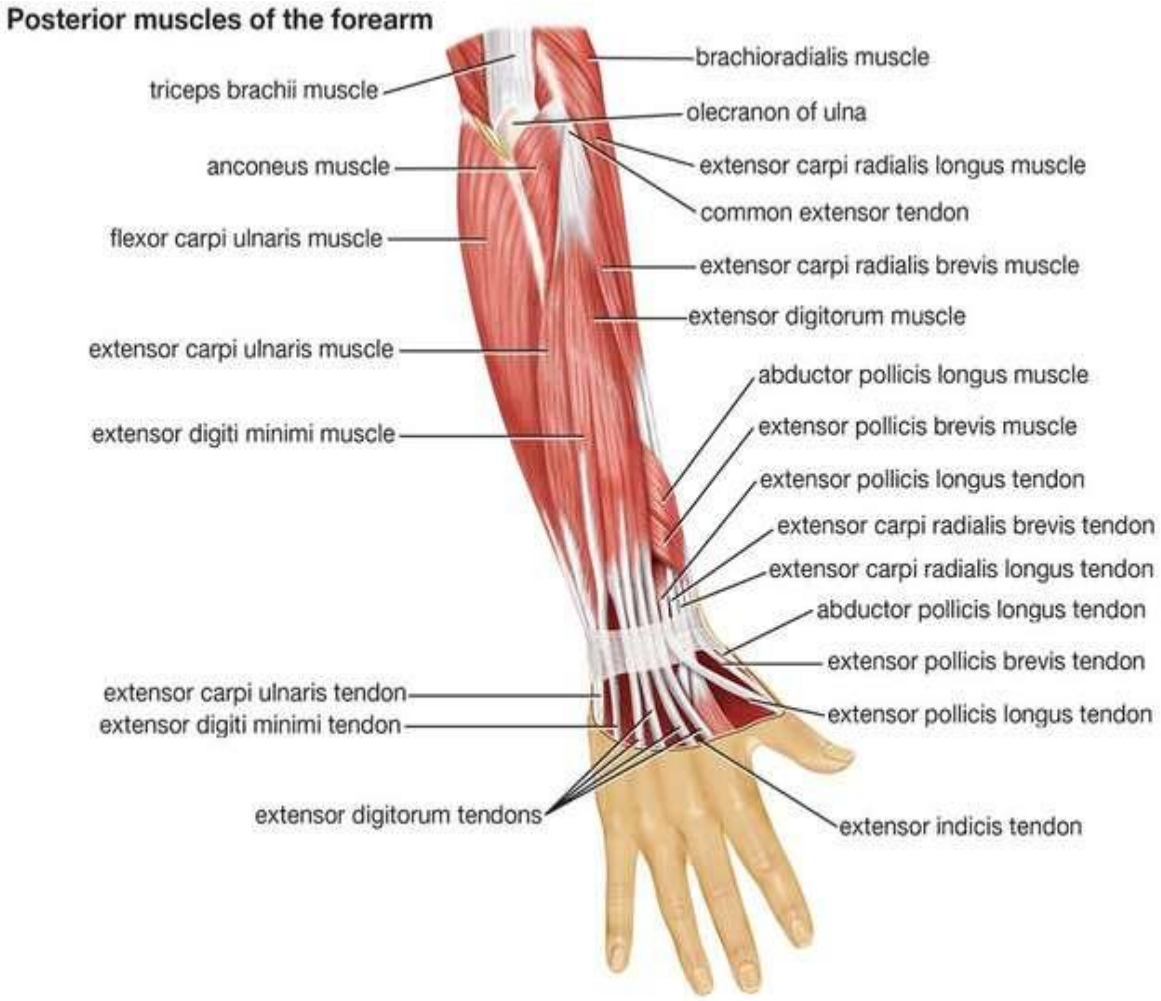


Muscles of the upper arm

Extension of the forearm increases the angle at the elbow, moving the hand away from the shoulder. That action is accomplished primarily by the triceps brachii. Other muscles that make minor contributions to forearm extension include the extensor muscles of the posterior compartment of the forearm (the side of the forearm that is contiguous with the back of the hand; also known as the extensor compartment), including the extensor carpi radialis longus, the extensor carpi radialis brevis, the extensor digitorum, the extensor carpi ulnaris, and the anconeus.

THE WRIST

Wrist flexion refers to movement of the wrist that draws the palm of the hand downward. That action is carried out by the flexor carpi radialis, the flexor carpi ulnaris, the flexor digitorum superficialis, the flexor digitorum profundus, and the flexor pollicis longus.



Muscles of the forearm (posterior view)

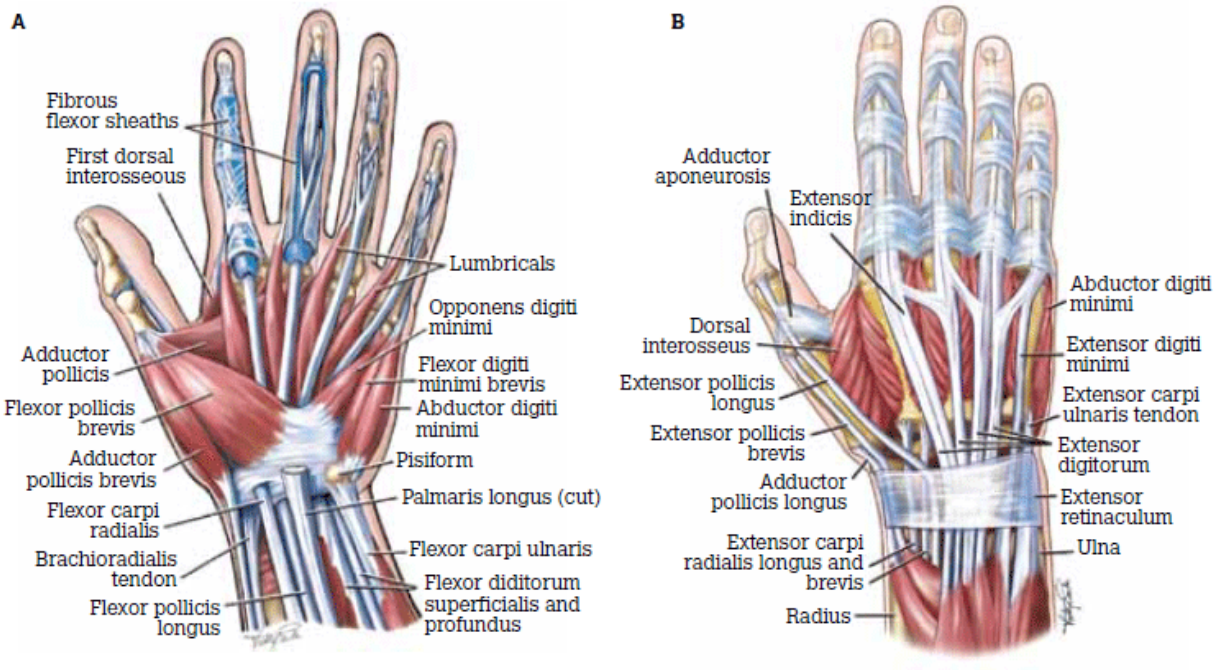
Wrist extension, by contrast, shortens the angle at the back of the wrist. The muscles responsible for that action are the extensor carpi radialis longus and the extensor carpi radialis brevis, which also

abduct the hand at the wrist (move the hand in the direction of the thumb, or first digit); the extensor digitorum, which also extends the index to little finger (the second to fifth digits); the extensor digiti minimi, which also extends the little finger and adducts the hand (moves the hand in the direction of the little finger); and the extensor carpi ulnaris, which also adducts the hand. Other small muscles that cross the wrist joint may add to wrist extension, but they do so to only a small degree.

Wrist supination is the rotation of the wrist that brings the palm facing up. The supinator muscle in the posterior compartment acts to supinate the forearm. The biceps brachii also adds to supination. Pronation is the opposing action, in which the wrist is rotated so that the palm is facing down. The pronator quadratus, a deep muscle in the anterior compartment, along with the pronator teres, pronates the forearm.

THE HAND

The hand is a complex structure that is involved in fine motor coordination and complex task performance. Its muscles generally are small and extensively innervated. Even simple actions, such as typing on a keyboard, require a multitude of precise movements to be carried out by the hand muscles. Because of that complexity, the following paragraphs cover only the primary action of each hand muscle.



Muscles of Hand (Anterior and Posterior View)

Several muscles that originate at the posterior surface of the ulna or the radius (the other bone in the forearm) have their actions in the hand. Those include the abductor pollicis longus, which abducts and extends the thumb; the extensor pollicis brevis, which extends the metacarpophalangeal (MCP) joint of

the thumb; the extensor pollicis, which extends the distal phalanx (finger bone) of the thumb; and the extensor indicis, which extends the index finger at the MCP joint. (MCP joints are located between the metacarpal bones, which are situated in the hand, and the phalanges, which are the small bones of the fingers.)

Although several of the muscles that move the hand have their origins in the forearm, there are many small muscles of the hand that have both their origin and their insertion within the hand. Those are referred to as the intrinsic muscles of the hand. They include the palmaris brevis, which assists with grip; the umbricals, which flex the MCP joints and extend the interphalangeal joints (IPs; the joints between the phalanges) of the fingers; the palmar interossei, which adduct the fingers toward the middle finger (the third digit); and the dorsal interossei, which abduct the fingers away from the middle finger. All the interossei flex the MCP joints and extend the IP joints.

The thenar eminence is located on the palm side of the base of the thumb and is composed of three muscles, the abductor pollicis brevis, the flexor pollicis brevis, and the opponens pollicis, all of which are innervated by the median nerve.

The abductor pollicis brevis abducts the thumb; the flexor pollicis brevis flexes the MCP joint of the thumb; and the opponens pollicis acts to oppose the thumb to the other fingers. The adductor pollicis, which is not part of the thenar eminence, acts to adduct the thumb.

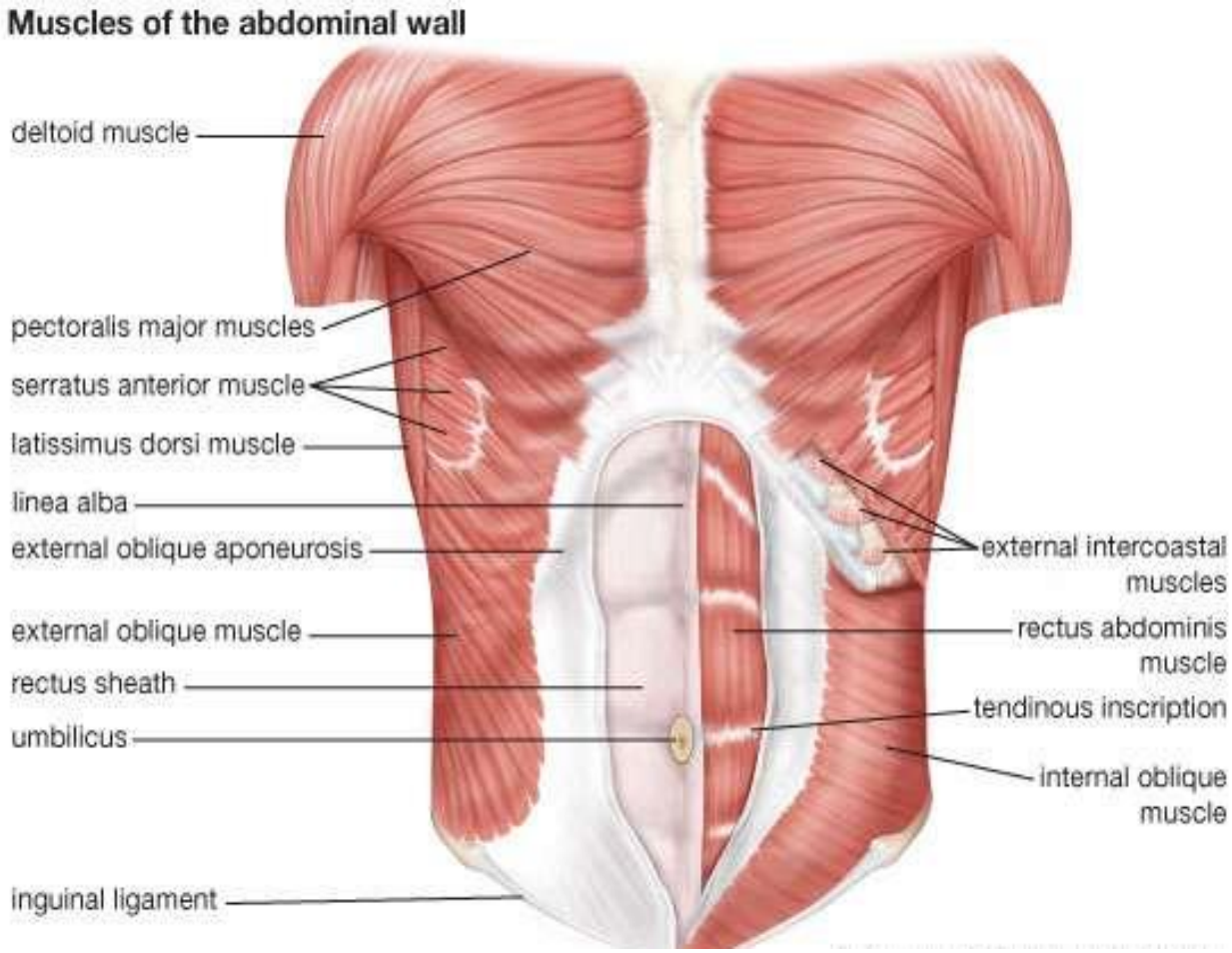
The hypothenar enimence is located on the palm side of the hand below the little finger. It contains three muscles that are innervated by the deep branch of the ulnar nerve. The abductor digiti minimi abducts the little finger. The flexor digiti minimi flexes the little finger. The opponens digiti minimi opposes the little finger with the thumb.

THE ABDOMEN

There are three muscular layers of the abdominal wall, with a fourth layer in the middle anterior region. The fourth layer in the midregion is the rectus abdominis, which has vertically running muscle fibres that flex the trunk and stabilize the pelvis. To either side of the rectus abdominis are the other three layers of abdominal muscles.

The deepest of those layers is the transversus abdominis, which has fibres that run perpendicular to the rectus abdominus; the transversus abdominis acts to compress and support the abdomen and provides static core stabilization.

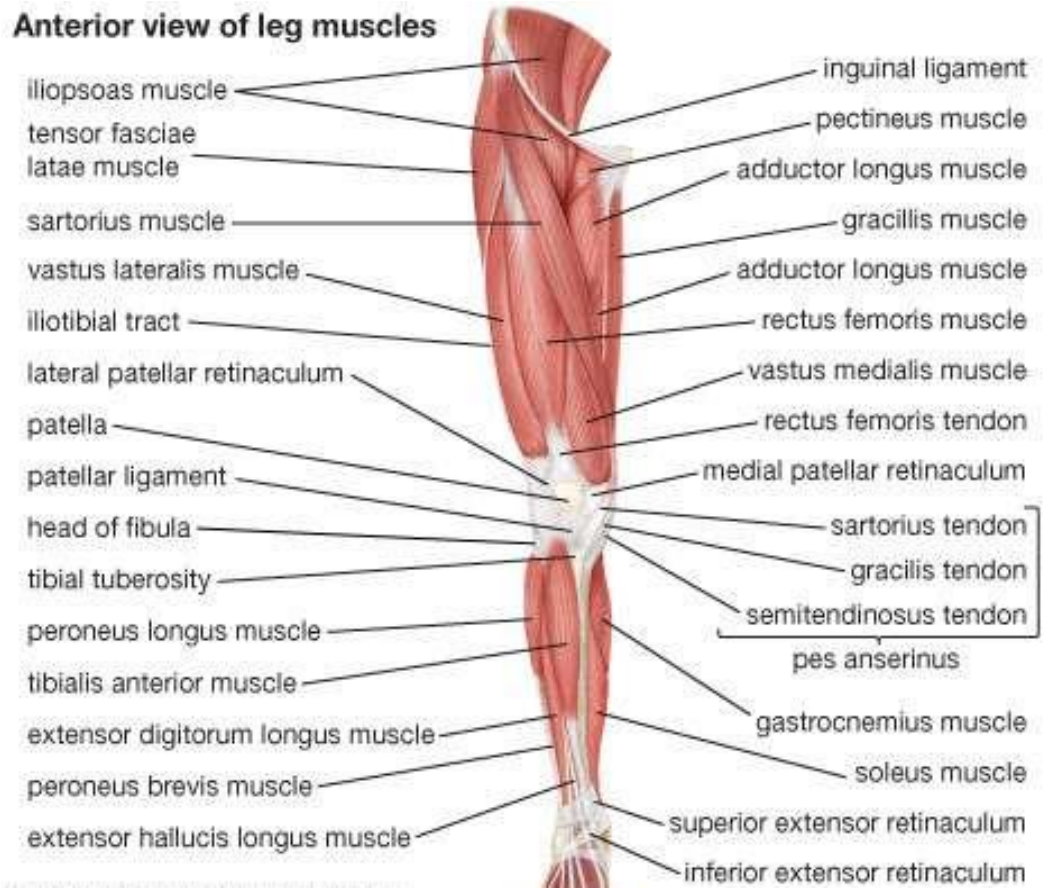
The internal oblique layers run upward and forward from the sides of the abdomen, and the external oblique layers, which form the outermost muscle layers of the abdomen, run downward and forward. The internal oblique layers act in conjunction with the external oblique on the opposite side of the body to flex and rotate the trunk toward the side of the contracting internal oblique (“same-side rotator”).



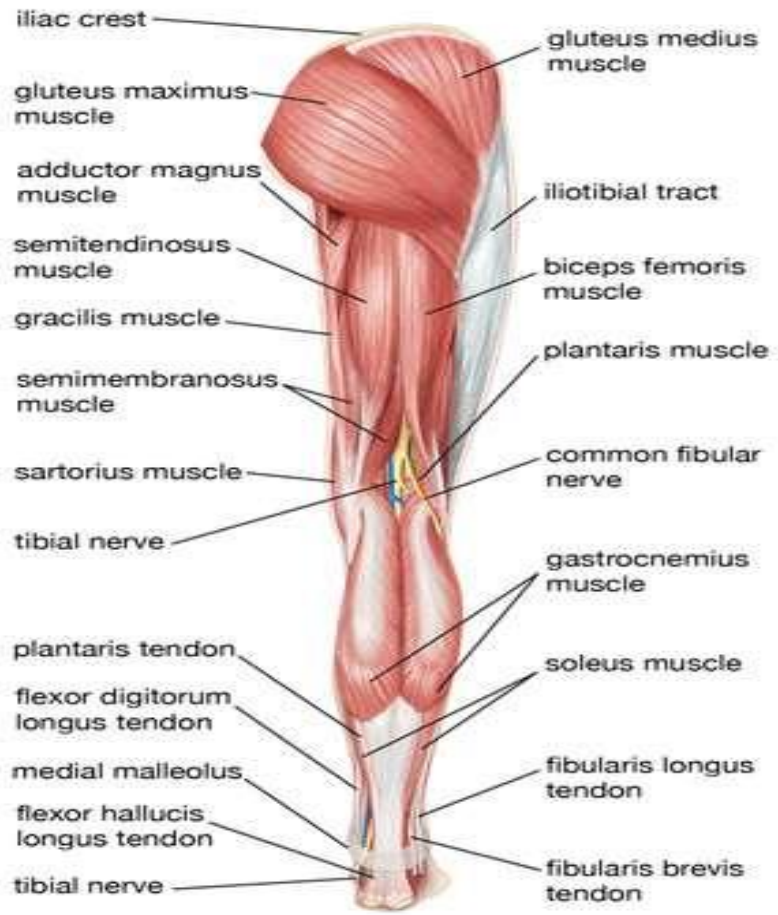
Muscles of the abdominal wall

THE HIP

The hip joint is a complex weight-bearing ball-and-socket joint that can sustain considerable load. The socket of the joint is relatively deep, allowing for stability but sacrificing some degree in range of motion. The movements described in this section include flexion, extension, abduction, and adduction.



Anterior view of the muscles of the human leg



Posterior view of the right leg, showing the muscles of the hip, thigh, and lower leg

Hip flexion is the hip motion that brings the knee toward the chest. The major muscles of hip flexion include the iliopsoas, which is made up of the psoas major, psoas minor, and iliacus. Together, those muscles act mainly to flex the hip, but they also contribute to abdominal flexion and hip stabilization. Other hip flexors include the sartorius, the rectus femoris, the pectineus, and the gracilis. The sartorius also contributes to external hip rotation and knee extension and abduction, and the rectus femoris also acts in knee extension. The pectineus is also involved in hip adduction and internal rotation.

Hip extension is accomplished primarily by the muscles of the posterior thigh and buttocks, which when contracted serve to move the thigh from a flexed position toward the midline of the body or the trunk of the body from a bent position toward a more-erect posture. Hip extension is accomplished mostly by the gluteus maximus, the biceps femoris (which is divided into two heads, the long head and the short head), the semitendinosus, and the semimembranosus. A minor contribution is also provided by the adductor magnus and other small pelvic muscles.

The movement of adduction is used to describe a direction of limb motion that serves to take the limb from a lateral position to its more-axial alignment. During a jumping-jack exercise, for example, abduction of the leg occurs when it is moved away from the midline and adduction when it is moved

back toward the midline. The main abductors of the hip are the gluteus medius, gluteus minimus, and tensor fascia lata. Those three muscles also serve to internally rotate the thigh in an extended position and externally rotate the thigh in the flexed position. Another minor contributor is the piriformis. The main hip adductors are the adductor magnus, the adductor brevis, and the adductor longus. A minor contribution to hip adduction is performed by the pectineus and the gracilis.

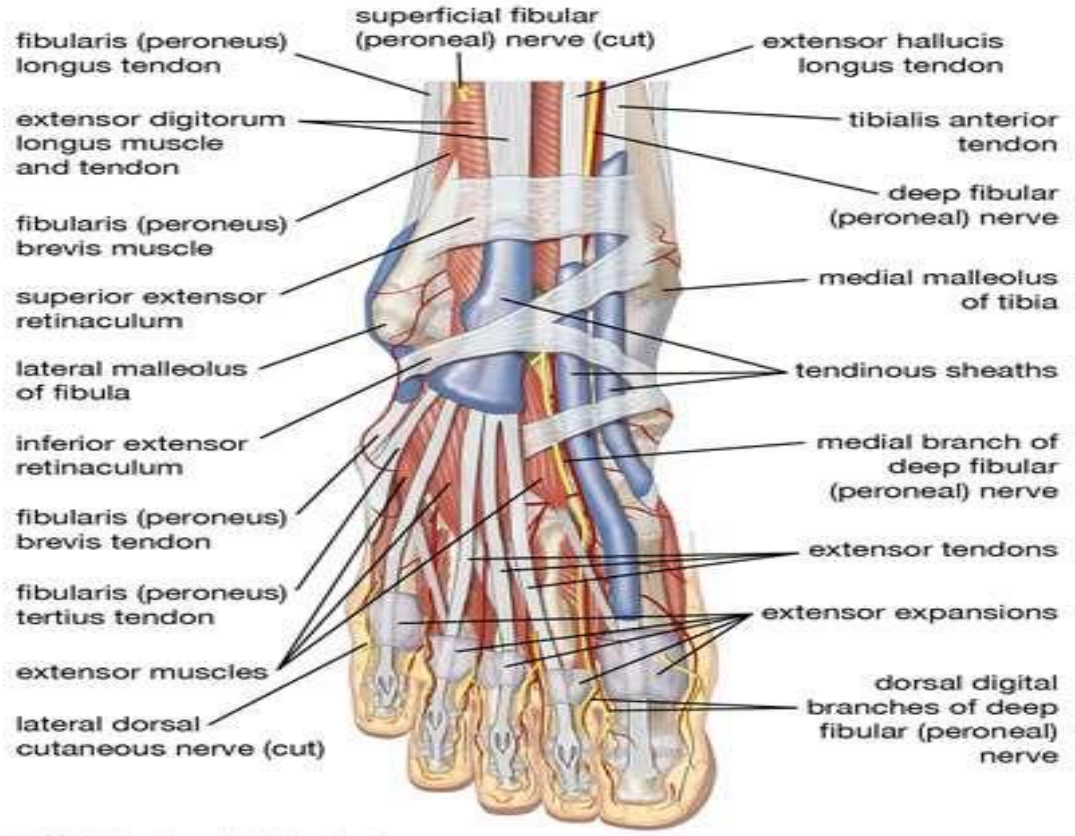
THE UPPER LEG AND KNEE

Extension of the knee is accomplished by a group of muscles collectively referred to as the quadriceps femoris, which increases the angle of the knee, bringing the lower leg into a straight position. Knee extension is used in the forward, swing phase of the gait and is integral in movements such as kicking. The quadriceps femoris group includes the vastus medius, vastus lateralis, vastus intermedius, and rectus femoris. A minor contribution to knee extension is provided by the sartorius.

Knee flexion refers to bending of the knee from the straight position. The muscles that perform that action oppose those of knee extension and are generally referred to as the hamstring muscles. The hamstring muscles are situated in the back of the thigh and include the biceps femoris, the semitendinosus, and the semimembranosus. Small contributions to knee flexion are made by the gastrocnemius muscle in the back of the calf and by several small muscles that cross the knee joint posteriorly.

THE LOWER LEG AND FOOT

The muscles of the lower leg and foot are complex and work in many planes. Their actions depend on whether the person is bearing weight, as well as on the position of the foot. The following paragraphs provide a brief overview of the actions of the muscles of the lower leg and foot.



Muscles, Tendons, and Nerves of the human foot

Dorsiflexion refers to ankle flexion in the direction of the dorsum, or anterior surface of the foot (the surface of the foot viewed from above). Dorsiflexion is accomplished by several muscles, including the tibialis anterior, which in addition to dorsiflexion also inverts the foot (tilts the foot toward the midline), stabilizes the foot when striking the ground, and locks the ankle when kicking. The extensor digitorum longus (EDL) also acts in dorsiflexion and functions to extend the last four toes. In addition to the EDL, some individuals also have a muscle called the peroneus tertius (fibularis tertius), which participates to a limited extent in dorsiflexion and eversion of the foot (tilting of the foot away from the midline). The extensor hallucis longus primarily acts in big toe (hallux) dorsiflexion, but it also acts to dorsiflex, as well as weakly invert, the ankle.

Plantarflexion refers to flexion of the ankle in the direction of the sole of the foot. That is most easily demonstrated by having a person stand on his or her toes. The majority of ankle plantarflexion is performed by the large calf musculature, including the gastrocnemius and the soleus, which lies just

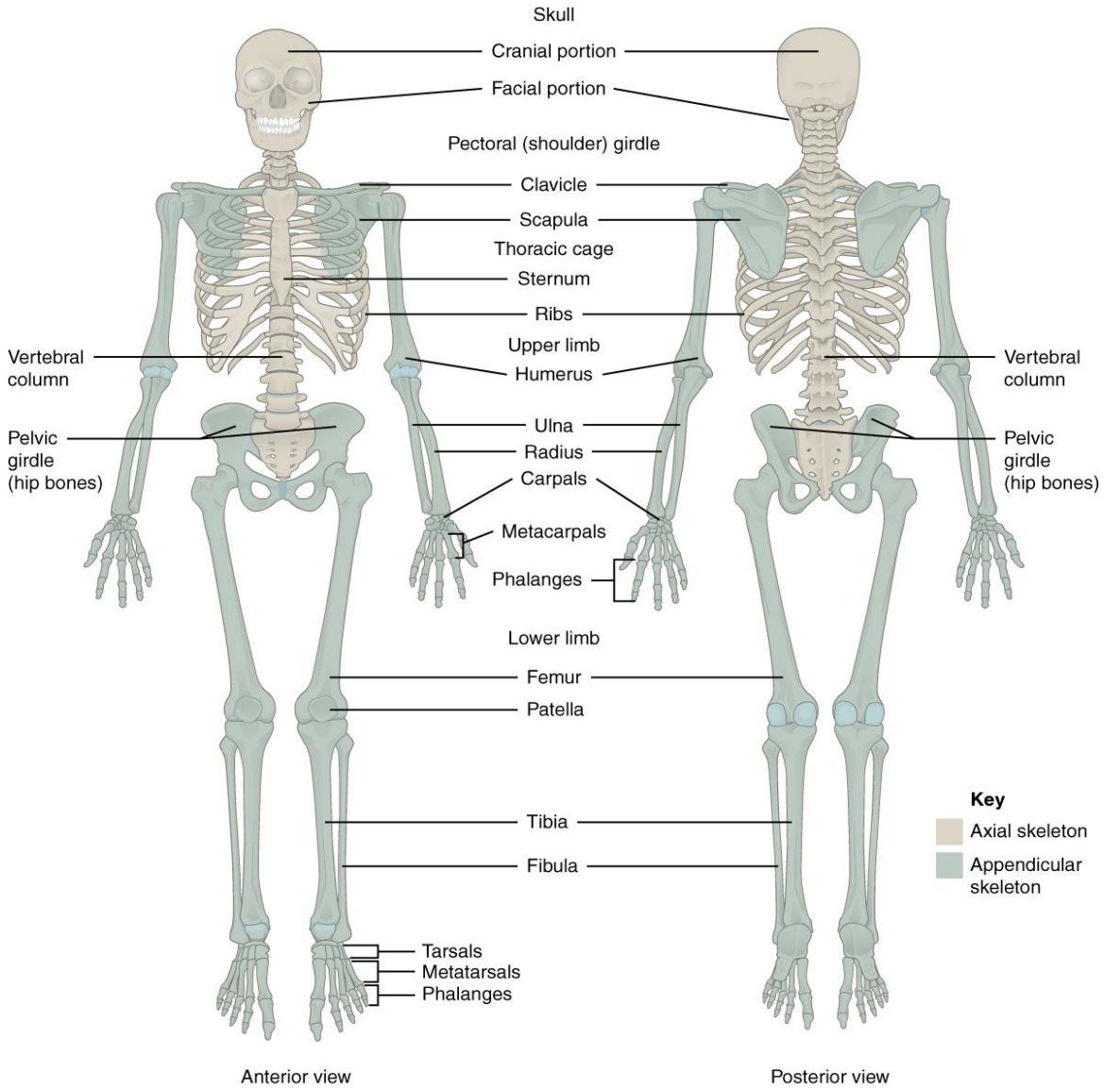
behind the gastrocnemius. It is generally accepted that those are two distinct muscles; however, there is some debate as to whether the gastrocnemius and the soleus are two parts of the same muscle.

Other muscles of the lower leg and foot include the plantaris, which runs obliquely between the gastrocnemius and the soleus; the flexor hallucis longus, which contributes to ankle flexion but is involved primarily in big toe flexion; the flexor digitorum longus, which also flexes the second to fifth toes; the peroneus longus, which flexes the ankle and everts the foot; and the peroneus brevis, which is involved in plantarflexion and eversion of the foot.

Intrinsic muscles of the foot arise in the foot and do not cross the ankle joint. Hence, their action is confined to the foot. The intrinsic muscles of the foot include the abductor hallucis, which abducts the big toe; the flexor digitorum brevis, which flexes the second to fifth toes; the abductor digiti minimi, which abducts and flexes the fifth toe; the quadratus plantae, which assists in toe flexion; the lumbricals, which flex the metatarsophalangeal (MTP) joints and extend the distal IP and proximal IP joints of the toes; the flexor hallucis brevis, which flexes the big toe; and the adductor hallucis, which flexes and contracts the big toe. The adductor hallucis has two heads, the oblique head and the transverse head, which share an insertion on the lateral (outer) side of the base of the proximal phalanx of the big toe. The oblique head arises from the base of the second to fourth metatarsal bones, and the transverse head arises from the ligaments of the MTP joints of the third to fifth toes. The flexor digiti minimi brevis extends and adducts the fifth toe. The dorsal interossei abduct the toes, and the plantar interossei adduct the toes.

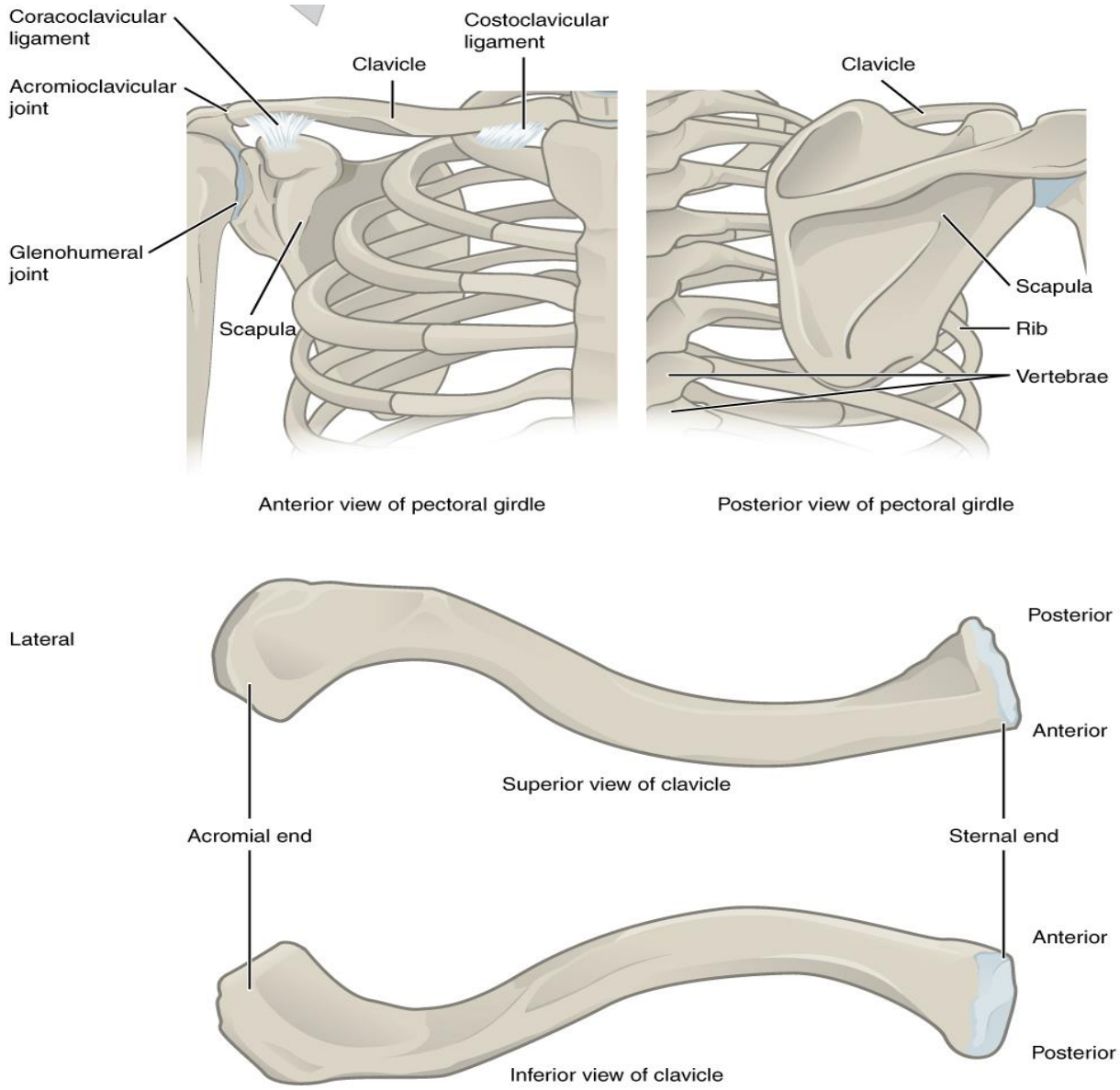
Pectoral Girdle & Functions

The appendicular skeleton includes all of the limb bones, plus the bones that unite each limb with the axial skeleton. The bones that attach each upper limb to the axial skeleton form the pectoral girdle (shoulder girdle). This consists of two bones, the scapula and clavicle. The clavicle (collarbone) is an S-shaped bone located on the anterior side of the shoulder. It is attached on its medial end to the sternum of the thoracic cage, which is part of the axial skeleton. The lateral end of the clavicle articulates (joins) with the scapula just above the shoulder joint. You can easily palpate, or feel with your fingers, the entire length of your clavicle.



Axial and Appendicular Skeletons

The axial skeleton forms the central axis of the body and consists of the skull, vertebral column, and thoracic cage. The appendicular skeleton consists of the pectoral and pelvic girdles, the limb bones, and the bones of the hands and feet.



Pectoral Girdle (Clavicle Joint)

The pectoral girdle consists of the clavicle and the scapula, which serve to attach the upper limb to the sternum of the axial skeleton.

The scapula (shoulder blade) lies on the posterior aspect of the shoulder. It is supported by the clavicle, which also articulates with the humerus (arm bone) to form the shoulder joint. The scapula is a flat, triangular-shaped bone with a prominent ridge running across its posterior surface. This ridge extends out laterally, where it forms the bony tip of the shoulder and joins with the lateral end of the clavicle. By following along the clavicle, you can palpate out to the bony tip of the shoulder, and from there, you can move back across your posterior shoulder to follow the ridge of the scapula. Move your shoulder around and feel how the clavicle and scapula move together as a unit. Both of these bones serve as important attachment sites for muscles that aid with movements of the shoulder and arm.

The right and left pectoral girdles are not joined to each other, allowing each to operate independently. In addition, the clavicle of each pectoral girdle is anchored to the axial skeleton by a single, highly mobile joint. This allows for the extensive mobility of the entire pectoral girdle, which in turn enhances movements of the shoulder and upper limb.

CLAVICLE

The clavicle is the only long bone that lies in a horizontal position in the body. The clavicle has several important functions. First, anchored by muscles from above, it serves as a strut that extends laterally to support the scapula. This in turn holds the shoulder joint superiorly and laterally from the body trunk, allowing for maximal freedom of motion for the upper limb. The clavicle also transmits forces acting on the upper limb to the sternum and axial skeleton. Finally, it serves to protect the underlying nerves and blood vessels as they pass between the trunk of the body and the upper limb.

The clavicle has three regions: the medial end, the lateral end, and the shaft. The medial end, known as the sternal end of the clavicle, has a triangular shape and articulates with the manubrium portion of the sternum. This forms the sternoclavicular joint, which is the only bony articulation between the pectoral girdle of the upper limb and the axial skeleton. This joint allows considerable mobility, enabling the clavicle and scapula to move in upward/downward and anterior/posterior directions during shoulder movements. The sternoclavicular joint is indirectly supported by the costoclavicular ligament (costo- = “rib”), which spans the sternal end of the clavicle and the underlying first rib. The lateral or acromial end of the clavicle articulates with the acromion of the scapula, the portion of the scapula that forms the bony tip of the shoulder. There are some sex differences in the morphology of the clavicle. In women, the clavicle tends to be shorter, thinner, and less curved. In men, the clavicle is heavier and longer, and has a greater curvature and rougher surfaces where muscles attach, features that are more pronounced in manual workers.

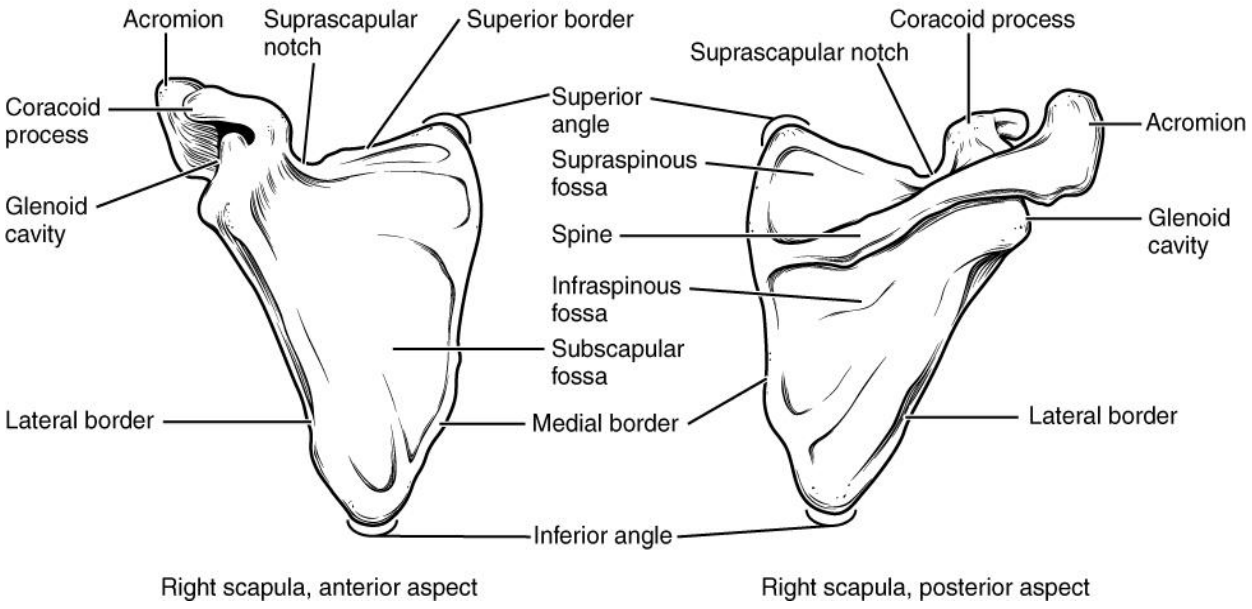
The clavicle is the most commonly fractured bone in the body. Such breaks often occur because of the force exerted on the clavicle when a person falls onto his or her outstretched arms, or when the lateral shoulder receives a strong blow. Because the sternoclavicular joint is strong and rarely dislocated, excessive force results in the breaking of the clavicle, usually between the middle and lateral portions of the bone. If the fracture is complete, the shoulder and lateral clavicle fragment will drop due to the weight of the upper limb, causing the person to support the sagging limb with their other hand. Muscles acting across the shoulder will also pull the shoulder and lateral clavicle anteriorly and medially, causing

the clavicle fragments to override. The clavicle overlies many important blood vessels and nerves for the upper limb, but fortunately, due to the anterior displacement of a broken clavicle, these structures are rarely affected when the clavicle is fractured.

SCAPULA

The scapula is also part of the pectoral girdle and thus plays an important role in anchoring the upper limb to the body. The scapula is located on the posterior side of the shoulder. It is surrounded by muscles on both its anterior (deep) and posterior (superficial) sides, and thus does not articulate with the ribs of the thoracic cage.

The scapula has several important landmarks. The three margins or borders of the scapula, named for their positions within the body, are the superior border of the scapula, the medial border of the scapula, and the lateral border of the scapula. The suprascapular notch is located lateral to the midpoint of the superior border. The corners of the triangular scapula, at either end of the medial border, are the superior angle of the scapula, located between the medial and superior borders, and the inferior angle of the scapula, located between the medial and lateral borders. The inferior angle is the most inferior portion of the scapula, and is particularly important because it serves as the attachment point for several powerful muscles involved in shoulder and upper limb movements. The remaining corner of the scapula, between the superior and lateral borders, is the location of the glenoid cavity (glenoid fossa). This shallow depression articulates with the humerus bone of the arm to form the glenohumeral joint (shoulder joint). The small bony bumps located immediately above and below the glenoid cavity are the supraglenoid tubercle and the infraglenoid tubercle, respectively. These provide attachments for muscles of the arm.



Scapula

The isolated scapula is shown here from its anterior (deep) side and its posterior (superficial) side.

The scapula also has two prominent projections. Toward the lateral end of the superior border, between the suprascapular notch and glenoid cavity, is the hook-like coracoid process (coracoid = “shaped like a crow’s beak”). This process projects anteriorly and curves laterally. At the shoulder, the coracoid process is located inferior to the lateral end of the clavicle. It is anchored to the clavicle by a strong ligament, and serves as the attachment site for muscles of the anterior chest and arm. On the posterior aspect, the spine of the scapula is a long and prominent ridge that runs across its upper portion. Extending laterally from the spine is a flattened and expanded region called the acromion or acromial process. The acromion forms the bony tip of the superior shoulder region and articulates with the lateral end of the clavicle, forming the acromioclavicular joint. Together, the clavicle, acromion, and spine of the scapula form a V-shaped bony line that provides for the attachment of neck and back muscles that act on the shoulder, as well as muscles that pass across the shoulder joint to act on the arm.

The scapula has three depressions, each of which is called a fossa (plural = fossae). Two of these are found on the posterior scapula, above and below the scapular spine. Superior to the spine is the narrow supraspinous fossa, and inferior to the spine is the broad infraspinous fossa. The anterior (deep) surface of the scapula forms the broad subscapular fossa. All of these fossae provide large surface areas for the attachment of muscles that cross the shoulder joint to act on the humerus.

The acromioclavicular joint transmits forces from the upper limb to the clavicle. The ligaments around this joint are relatively weak. A hard fall onto the elbow or outstretched hand can stretch or tear the acromioclavicular ligaments, resulting in a moderate injury to the joint. However, the primary support for the acromioclavicular joint comes from a very strong ligament called the coracoclavicular ligament . This connective tissue band anchors the coracoid process of the scapula to the inferior surface of the acromial end of the clavicle and thus provides important indirect support for the acromioclavicular joint. Following a strong blow to the lateral shoulder, such as when a hockey player is driven into the boards, a complete dislocation of the acromioclavicular joint can result. In this case, the acromion is thrust under the acromial end of the clavicle, resulting in ruptures of both the acromioclavicular and coracoclavicular ligaments. The scapula then separates from the clavicle, with the weight of the upper limb pulling the shoulder downward. This dislocation injury of the acromioclavicular joint is known as a “shoulder separation” and is common in contact sports such as hockey, football, or martial arts.

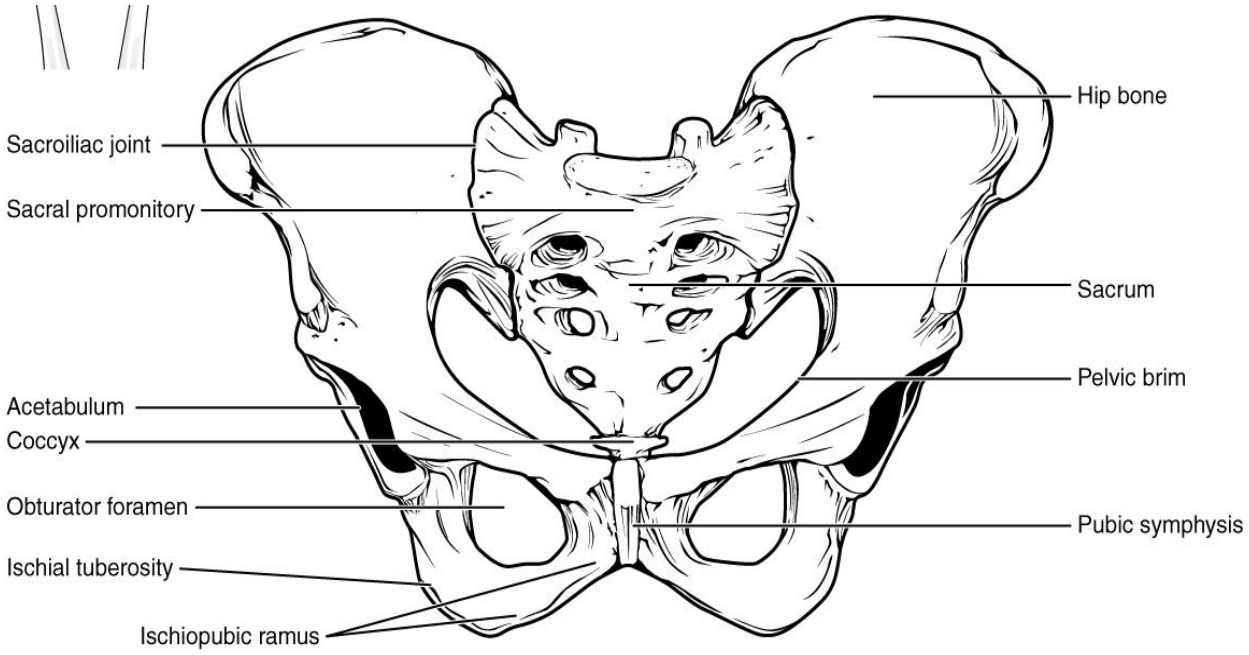
The pectoral girdle, consisting of the clavicle and the scapula, attaches each upper limb to the axial skeleton. The clavicle is an anterior bone whose sternal end articulates with the manubrium of the sternum at the sternoclavicular joint. The sternal end is also anchored to the first rib by the costoclavicular ligament. The acromial end of the clavicle articulates with the acromion of the scapula at the acromioclavicular joint. This end is also anchored to the coracoid process of the scapula by the coracoclavicular ligament, which provides indirect support for the acromioclavicular joint. The clavicle supports the scapula, transmits the weight and forces from the upper limb to the body trunk, and protects the underlying nerves and blood vessels.

The scapula lies on the posterior aspect of the pectoral girdle. It mediates the attachment of the upper limb to the clavicle, and contributes to the formation of the glenohumeral (shoulder) joint. This triangular bone has three sides called the medial, lateral, and superior borders. The suprascapular notch is located on the superior border. The scapula also has three corners, two of which are the superior and inferior angles. The third corner is occupied by the glenoid cavity. Posteriorly, the spine separates the supraspinous and infraspinous fossae, and then extends laterally as the acromion. The subscapular fossa is located on the anterior surface of the scapula. The coracoid process projects anteriorly, passing inferior to the lateral end of the clavicle.

Pelvic Girdle & Functions

The pelvic girdle (hip girdle) is formed by a single bone, the hip bone or coxal bone (coxal = "hip"), which serves as the attachment point for each lower limb. Each hip bone, in turn, is firmly joined to the axial skeleton via its attachment to the sacrum of the vertebral column. The right and left hip bones also converge anteriorly to attach to each other. The bony pelvis is the entire structure formed by the two hip bones, the sacrum, and, attached inferiorly to the sacrum, the coccyx.

Unlike the bones of the pectoral girdle, which are highly mobile to enhance the range of upper limb movements, the bones of the pelvis are strongly united to each other to form a largely immobile, weight-bearing structure. This is important for stability because it enables the weight of the body to be easily transferred laterally from the vertebral column, through the pelvic girdle and hip joints, and into either lower limb whenever the other limb is not bearing weight. Thus, the immobility of the pelvis provides a strong foundation for the upper body as it rests on top of the mobile lower limbs.

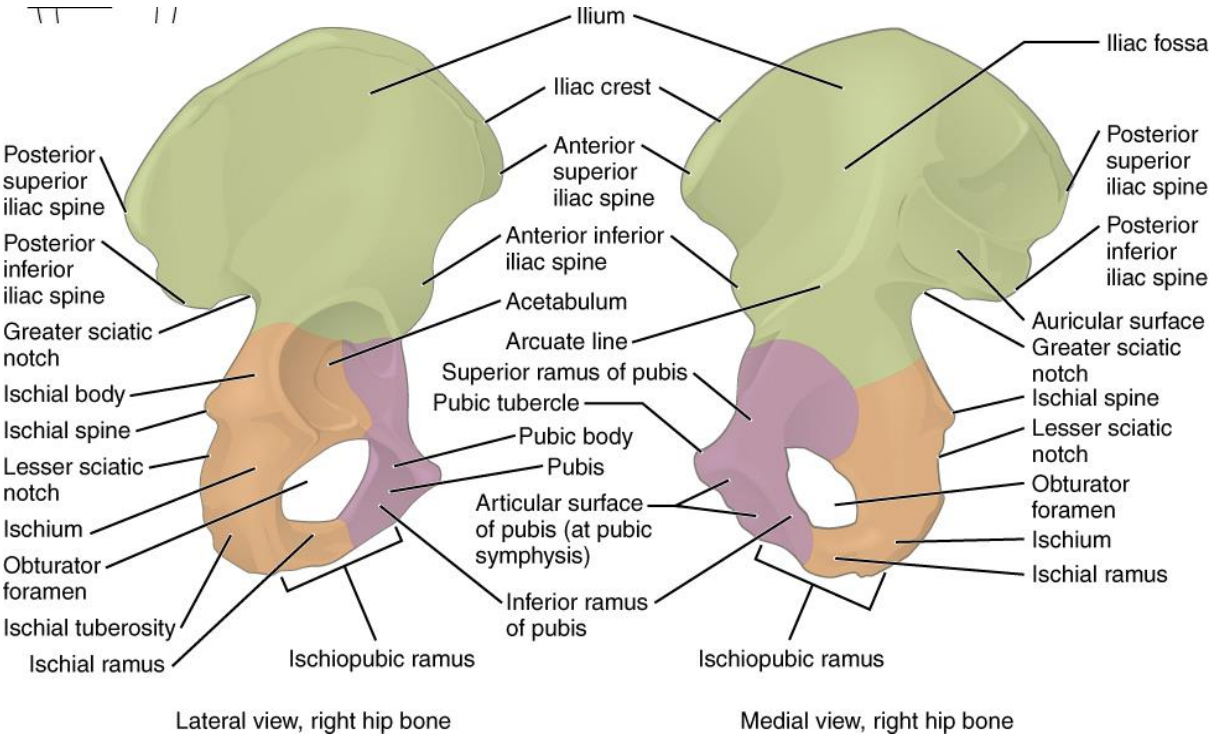


Pelvis

The pelvic girdle is formed by a single hip bone. The hip bone attaches the lower limb to the axial skeleton through its articulation with the sacrum. The right and left hip bones, plus the sacrum and the coccyx, together form the pelvis.

HIP BONE

The hip bone, or coxal bone, forms the pelvic girdle portion of the pelvis. The paired hip bones are the large, curved bones that form the lateral and anterior aspects of the pelvis. Each adult hip bone is formed by three separate bones that fuse together during the late teenage years. These bony components are the ilium, ischium, and pubis. These names are retained and used to define the three regions of the adult hip bone.



The Hip Bone

The adult hip bone consists of three regions. The ilium forms the large, fan-shaped superior portion, the ischium forms the posteroinferior portion, and the pubis forms the anteromedial portion.

The ilium is the fan-like, superior region that forms the largest part of the hip bone. It is firmly united to the sacrum at the largely immobile sacroiliac joint. The ischium forms the posteroinferior region of each hip bone. It supports the body when sitting. The pubis forms the anterior portion of the hip bone. The pubis curves medially where it joins to the pubis of the opposite hip bone at a specialized joint called the pubic symphysis.

ILIUM

When you place your hands on your waist, you can feel the arching, superior margin of the ilium along your waistline. This curved, superior margin of the ilium is the iliac crest. The rounded, anterior termination of the iliac crest is the anterior superior iliac spine. This important bony landmark can be felt at your anterolateral hip. Inferior to the anterior superior iliac spine is a rounded protuberance called the anterior inferior iliac spine. Both of these iliac spines serve as attachment points for muscles of the thigh. Posteriorly, the iliac crest curves downward to terminate as the posterior superior iliac spine. Muscles and ligaments surround but do not cover this bony landmark, thus sometimes producing a depression seen as a “dimple” located on the lower back. More inferiorly is the posterior inferior iliac spine. This is located at the inferior end of a large, roughened area called the auricular surface of the ilium. The auricular surface articulates with the auricular surface of the sacrum to form the sacroiliac joint. Both the posterior superior and posterior inferior iliac spines serve as attachment points for the muscles and very strong ligaments that support the sacroiliac joint.

The shallow depression located on the anteromedial (internal) surface of the upper ilium is called the iliac fossa. The inferior margin of this space is formed by the arcuate line of the ilium, the ridge formed by the pronounced change in curvature between the upper and lower portions of the ilium. The large, inverted U-shaped indentation located on the posterior margin of the lower ilium is called the greater sciatic notch.

ISCHIUM

The ischium forms the posterolateral portion of the hip bone. The large, roughened area of the inferior ischium is the ischial tuberosity. This serves as the attachment for the posterior thigh muscles and also carries the weight of the body when sitting. You can feel the ischial tuberosity if you wiggle your pelvis against the seat of a chair. Projecting superiorly and anteriorly from the ischial tuberosity is a narrow segment of bone called the ischial ramus. The slightly curved posterior margin of the ischium above the ischial tuberosity is the lesser sciatic notch. The bony projection separating the lesser sciatic notch and greater sciatic notch is the ischial spine.

PUBIS

The pubis forms the anterior portion of the hip bone. The enlarged medial portion of the pubis is the pubic body. Located superiorly on the pubic body is a small bump called the pubic tubercle. The superior pubic ramus is the segment of bone that passes laterally from the pubic body to join the ilium. The narrow ridge running along the superior margin of the superior pubic ramus is the pectineal line of the pubis.

The pubic body is joined to the pubic body of the opposite hip bone by the pubic symphysis. Extending downward and laterally from the body is the inferior pubic ramus. The pubic arch is the bony structure formed by the pubic symphysis, and the bodies and inferior pubic rami of the adjacent pubic bones. The inferior pubic ramus extends downward to join the ischial ramus.

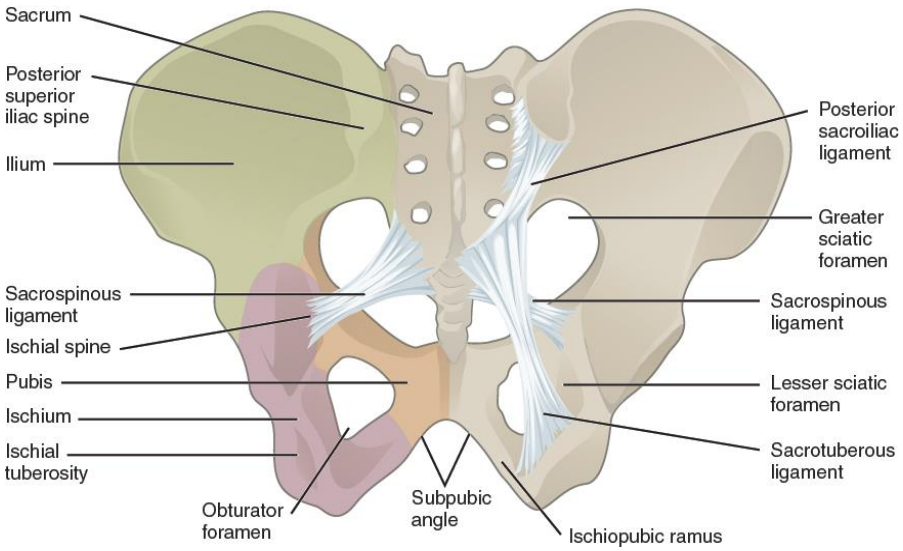
Together, these form the single ischiopubic ramus, which extends from the pubic body to the ischial tuberosity. The inverted V-shape formed as the ischiopubic rami from both sides come together at the pubic symphysis is called the subpubic angle.

PELVIS

The pelvis consists of four bones: the right and left hip bones, the sacrum, and the coccyx. The pelvis has several important functions. Its primary role is to support the weight of the upper body when sitting and to transfer this weight to the lower limbs when standing. It serves as an attachment point for trunk and lower limb muscles, and also protects the internal pelvic organs. When standing in the anatomical position, the pelvis is tilted anteriorly. In this position, the anterior superior iliac spines and the pubic tubercles lie in the same vertical plane, and the anterior (internal) surface of the sacrum faces forward and downward.

The three areas of each hip bone, the ilium, pubis, and ischium, converge centrally to form a deep, cup-shaped cavity called the acetabulum. This is located on the lateral side of the hip bone and is part of the hip joint. The large opening in the anteroinferior hip bone between the ischium and pubis is the obturator foramen. This space is largely filled in by a layer of connective tissue and serves for the attachment of muscles on both its internal and external surfaces.

Several ligaments unite the bones of the pelvis. The largely immobile sacroiliac joint is supported by a pair of strong ligaments that are attached between the sacrum and ilium portions of the hip bone. These are the anterior sacroiliac ligament on the anterior side of the joint and the posterior sacroiliac ligament on the posterior side. Also spanning the sacrum and hip bone are two additional ligaments. The sacrospinous ligament runs from the sacrum to the ischial spine, and the sacrotuberous ligament runs from the sacrum to the ischial tuberosity. These ligaments help to support and immobilize the sacrum as it carries the weight of the body.



Ligaments of the Pelvis

The posterior sacroiliac ligament supports the sacroiliac joint. The sacrospinous ligament spans the sacrum to the ischial spine, and the sacrotuberous ligament spans the sacrum to the ischial tuberosity. The sacrospinous and sacrotuberous ligaments contribute to the formation of the greater and lesser sciatic foramens.

The sacrospinous and sacrotuberous ligaments also help to define two openings on the posterolateral sides of the pelvis through which muscles, nerves, and blood vessels for the lower limb exit. The superior opening is the greater sciatic foramen. This large opening is formed by the greater sciatic notch of the hip bone, the sacrum, and the sacrospinous ligament. The smaller, more inferior lesser sciatic foramen is formed by the lesser sciatic notch of the hip bone, together with the sacrospinous and sacrotuberous ligaments.

The space enclosed by the bony pelvis is divided into two regions. The broad, superior region, defined laterally by the large, fan-like portion of the upper hip bone, is called the greater pelvis (greater pelvic cavity; false pelvis). This broad area is occupied by portions of the small and large intestines, and because it is more closely associated with the abdominal cavity, it is sometimes referred to as the false pelvis. More inferiorly, the narrow, rounded space of the lesser pelvis (lesser pelvic cavity; true pelvis) contains the bladder and other pelvic organs, and thus is also known as the true pelvis. The pelvic brim (also known as the pelvic inlet) forms the superior margin of the lesser pelvis, separating it from the greater pelvis.

The pelvic brim is defined by a line formed by the upper margin of the pubic symphysis anteriorly, and the pectineal line of the pubis, the arcuate line of the ilium, and the sacral promontory (the anterior margin of the superior sacrum) posteriorly. The inferior limit of the lesser pelvic cavity is called the pelvic outlet. This large opening is defined by the inferior margin of the pubic symphysis anteriorly, and the ischiopubic ramus, the ischial tuberosity, the sacrotuberous ligament, and the inferior tip of the coccyx posteriorly. Because of the anterior tilt of the pelvis, the lesser pelvis is also angled, giving it an anterosuperior (pelvic inlet) to posteroinferior (pelvic outlet) orientation.

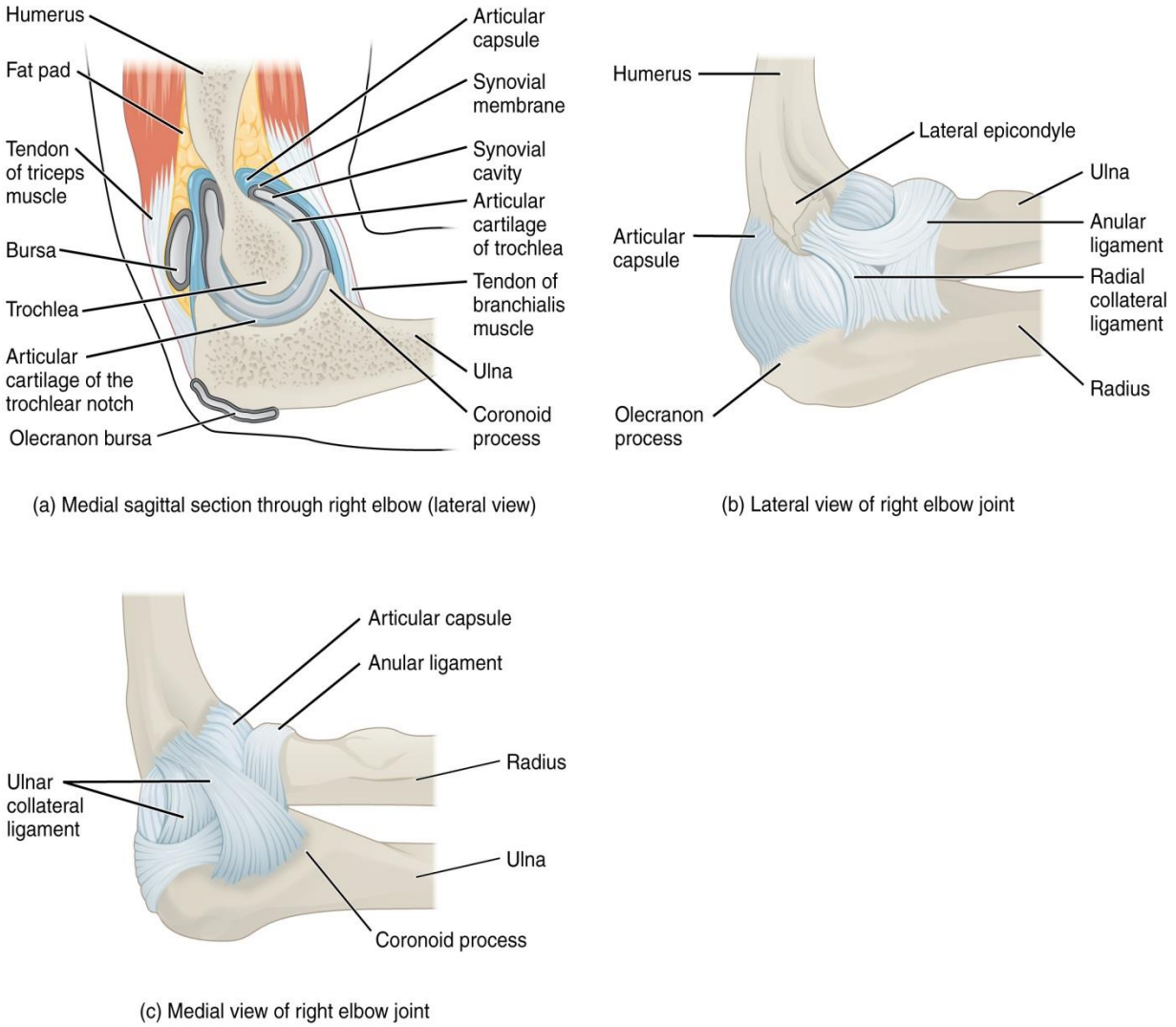
ELBOW JOINT

The elbow joint is a uniaxial hinge joint formed by the humeroulnar joint, the articulation between the trochlea of the humerus and the trochlear notch of the ulna. Also associated with the elbow are the humeroradial joint and the proximal radioulnar joint. All three of these joints are enclosed within a single articular capsule.

The articular capsule of the elbow is thin on its anterior and posterior aspects, but is thickened along its outside margins by strong intrinsic ligaments. These ligaments prevent side-to-side movements and hyperextension. On the medial side is the triangular ulnar collateral ligament. This arises from the medial epicondyle of the humerus and attaches to the medial side of the proximal ulna. The strongest part of this ligament is the anterior portion, which resists hyperextension of the elbow. The ulnar collateral ligament may be injured by frequent, forceful extensions of the forearm, as is seen in baseball

pitchers. Reconstructive surgical repair of this ligament is referred to as Tommy John surgery, named for the former major league pitcher who was the first person to have this treatment.

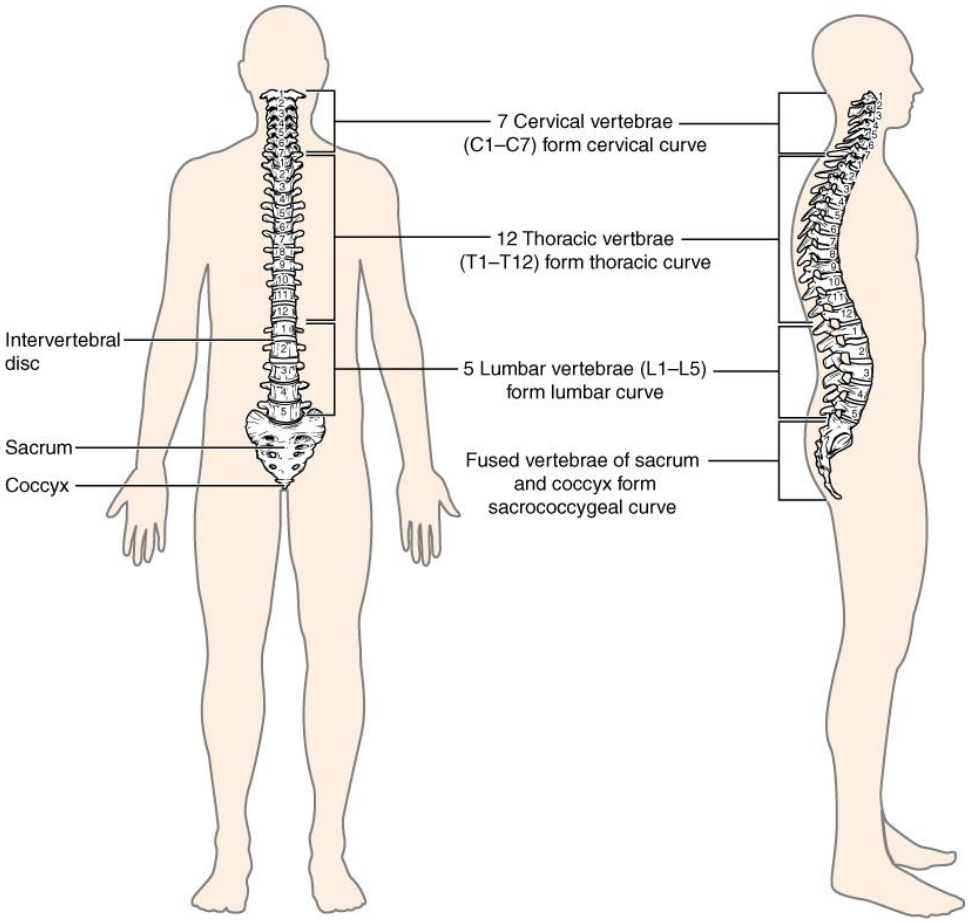
The lateral side of the elbow is supported by the radial collateral ligament. This arises from the lateral epicondyle of the humerus and then blends into the lateral side of the annular ligament. The annular ligament encircles the head of the radius. This ligament supports the head of the radius as it articulates with the radial notch of the ulna at the proximal radioulnar joint. This is a pivot joint that allows for rotation of the radius during supination and pronation of the forearm.



Elbow Joint. (a) The elbow is a hinge joint that allows only for flexion and extension of the forearm. (b) It is supported by the ulnar and radial collateral ligaments. (c) The annular ligament supports the head of the radius at the proximal radioulnar joint, the pivot joint that allows for rotation of the radius.

Spinal Vertebrae & Functions

The vertebral column is also known as the spinal column or spine. It consists of a sequence of vertebrae (singular = vertebra), each of which is separated and united by an intervertebral disc. Together, the vertebrae and intervertebral discs form the vertebral column. It is a flexible column that supports the head, neck, and body and allows for their movements. It also protects the spinal cord, which passes down the back through openings in the vertebrae.



Vertebral Column. The adult vertebral column consists of 24 vertebrae, plus the sacrum and coccyx. The vertebrae are divided into three regions: cervical C1–C7 vertebrae, thoracic T1–T12 vertebrae, and lumbar L1–L5 vertebrae. The vertebral column is curved, with two primary curvatures (thoracic and sacrococcygeal curves) and two secondary curvatures (cervical and lumbar curves).

REGIONS OF THE VERTEBRAL COLUMN

The vertebral column originally develops as a series of 33 vertebrae, but this number is eventually reduced to 24 vertebrae, plus the sacrum and coccyx. The vertebral column is subdivided into five regions, with the vertebrae in each area named for that region and numbered in descending order. In

the neck, there are seven cervical vertebrae, each designated with the letter “C” followed by its number. Superiorly, the C1 vertebra articulates (forms a joint) with the occipital condyles of the skull. Inferiorly, C1 articulates with the C2 vertebra, and so on. Below these are the 12 thoracic vertebrae, designated T1–T12. The lower back contains the L1–L5 lumbar vertebrae. The single sacrum, which is also part of the pelvis, is formed by the fusion of five sacral vertebrae. Similarly, the coccyx, or tailbone, results from the fusion of four small coccygeal vertebrae. However, the sacral and coccygeal fusions do not start until age 20 and are not completed until middle age.

An interesting anatomical fact is that almost all mammals have seven cervical vertebrae, regardless of body size. This means that there are large variations in the size of cervical vertebrae, ranging from the very small cervical vertebrae of a shrew to the greatly elongated vertebrae in the neck of a giraffe. In a full-grown giraffe, each cervical vertebra is 11 inches tall.

CURVATURES OF THE VERTEBRAL COLUMN

The adult vertebral column does not form a straight line, but instead has four curvatures along its length. These curves increase the vertebral column’s strength, flexibility, and ability to absorb shock. When the load on the spine is increased, by carrying a heavy backpack for example, the curvatures increase in depth (become more curved) to accommodate the extra weight. They then spring back when the weight is removed. The four adult curvatures are classified as either primary or secondary curvatures. Primary curves are retained from the original fetal curvature, while secondary curvatures develop after birth.

During fetal development, the body is flexed anteriorly into the fetal position, giving the entire vertebral column a single curvature that is concave anteriorly. In the adult, this fetal curvature is retained in two regions of the vertebral column as the thoracic curve, which involves the thoracic vertebrae, and the sacrococcygeal curve, formed by the sacrum and coccyx. Each of these is thus called a primary curve because they are retained from the original fetal curvature of the vertebral column.

A secondary curve develops gradually after birth as the child learns to sit upright, stand, and walk. Secondary curves are concave posteriorly, opposite in direction to the original fetal curvature. The cervical curve of the neck region develops as the infant begins to hold their head upright when sitting. Later, as the child begins to stand and then to walk, the lumbar curve of the lower back develops. In adults, the lumbar curve is generally deeper in females.

Disorders associated with the curvature of the spine include kyphosis (an excessive posterior curvature of the thoracic region), lordosis (an excessive anterior curvature of the lumbar region), and scoliosis (an abnormal, lateral curvature, accompanied by twisting of the vertebral column).

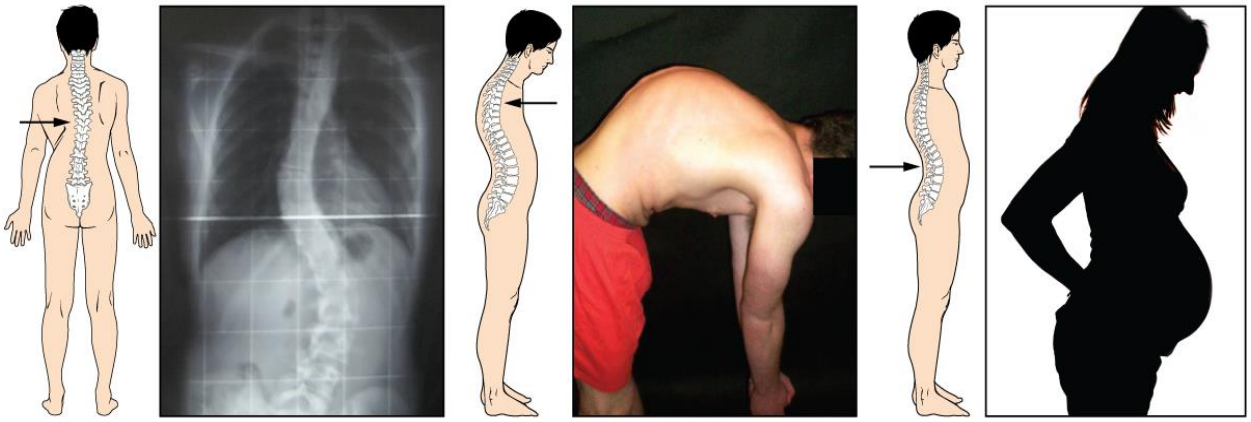
DISORDERS OF THE VERTEBRAL COLUMN

Developmental anomalies, pathological changes, or obesity can enhance the normal vertebral column curves, resulting in the development of abnormal or excessive curvatures. Kyphosis, also referred to as humpback or hunchback, is an excessive posterior curvature of the thoracic region. This can develop

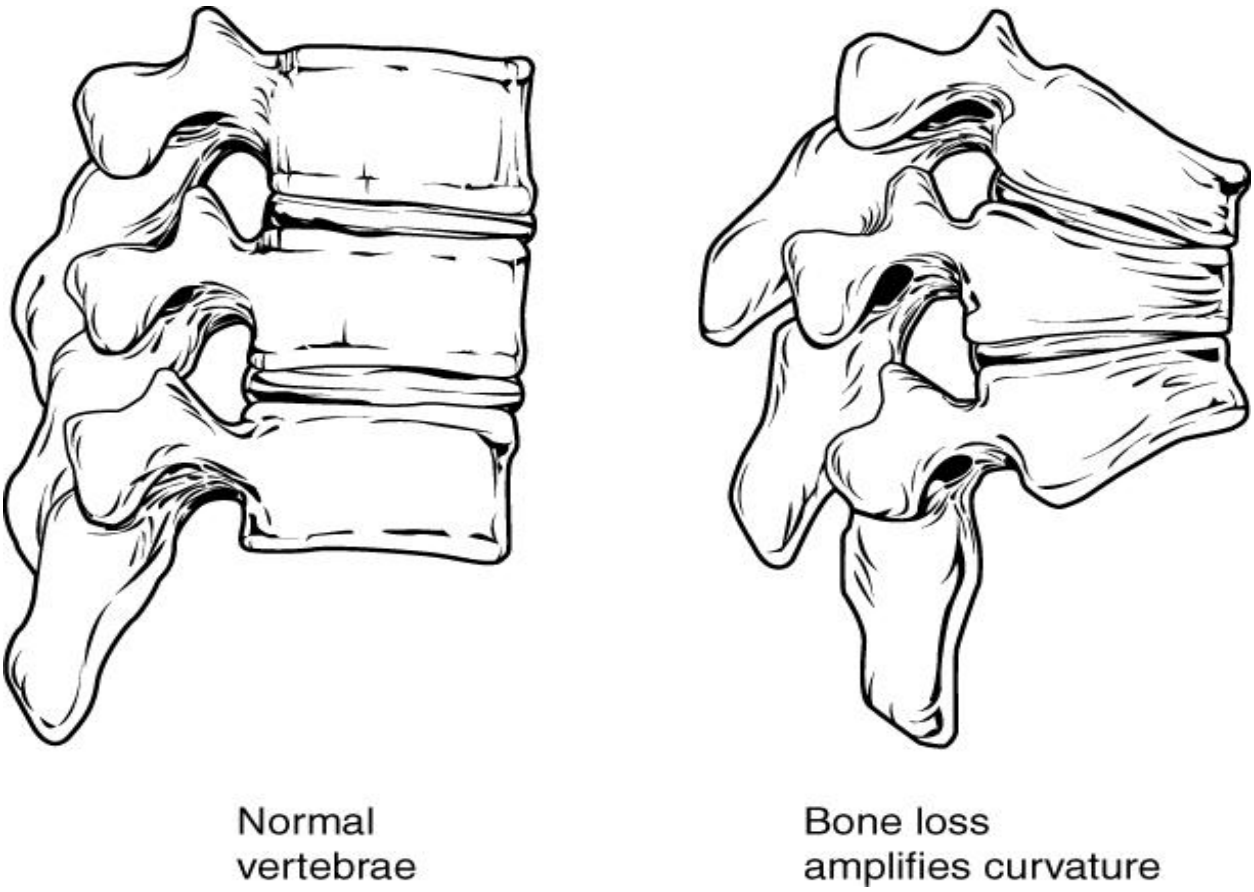
when osteoporosis causes weakening and erosion of the anterior portions of the upper thoracic vertebrae, resulting in their gradual collapse. Lordosis, or swayback, is an excessive anterior curvature of the lumbar region and is most commonly associated with obesity or late pregnancy. The accumulation of body weight in the abdominal region results an anterior shift in the line of gravity that carries the weight of the body. This causes in an anterior tilt of the pelvis and a pronounced enhancement of the lumbar curve.

Scoliosis is an abnormal, lateral curvature, accompanied by twisting of the vertebral column. Compensatory curves may also develop in other areas of the vertebral column to help maintain the head positioned over the feet. Scoliosis is the most common vertebral abnormality among girls. The cause is usually unknown, but it may result from weakness of the back muscles, defects such as differential growth rates in the right and left sides of the vertebral column, or differences in the length of the lower limbs. When present, scoliosis tends to get worse during adolescent growth spurts. Although most individuals do not require treatment, a back brace may be recommended for growing children. In extreme cases, surgery may be required.

Excessive vertebral curves can be identified while an individual stands in the anatomical position. Observe the vertebral profile from the side and then from behind to check for kyphosis or lordosis. Then have the person bend forward. If scoliosis is present, an individual will have difficulty in bending directly forward, and the right and left sides of the back will not be level with each other in the bent position.



Abnormal Curvatures of the Vertebral Column. (a) Scoliosis is an abnormal lateral bending of the vertebral column. (b) An excessive curvature of the upper thoracic vertebral column is called kyphosis. (c) Lordosis is an excessive curvature in the lumbar region of the vertebral column.



Osteoporosis. Osteoporosis is an age-related disorder that causes the gradual loss of bone density and strength. When the thoracic vertebrae are affected, there can be a gradual collapse of the vertebrae. This results in kyphosis, an excessive curvature of the thoracic region.

GENERAL STRUCTURE OF A VERTEBRA

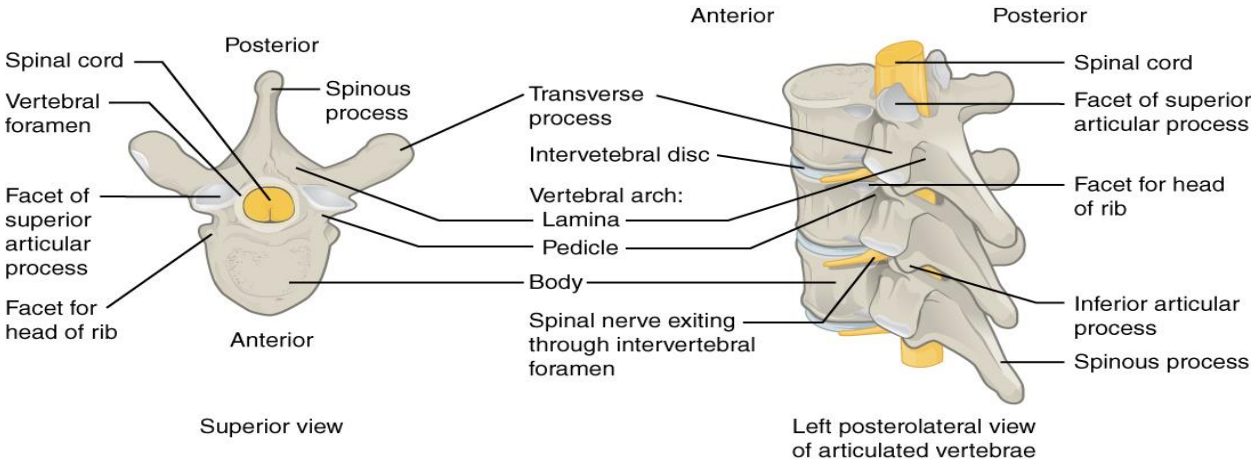
Within the different regions of the vertebral column, vertebrae vary in size and shape, but they all follow a similar structural pattern. A typical vertebra will consist of a body, a vertebral arch, and seven processes.

The body is the anterior portion of each vertebra and is the part that supports the body weight. Because of this, the vertebral bodies progressively increase in size and thickness going down the vertebral column. The bodies of adjacent vertebrae are separated and strongly united by an intervertebral disc.

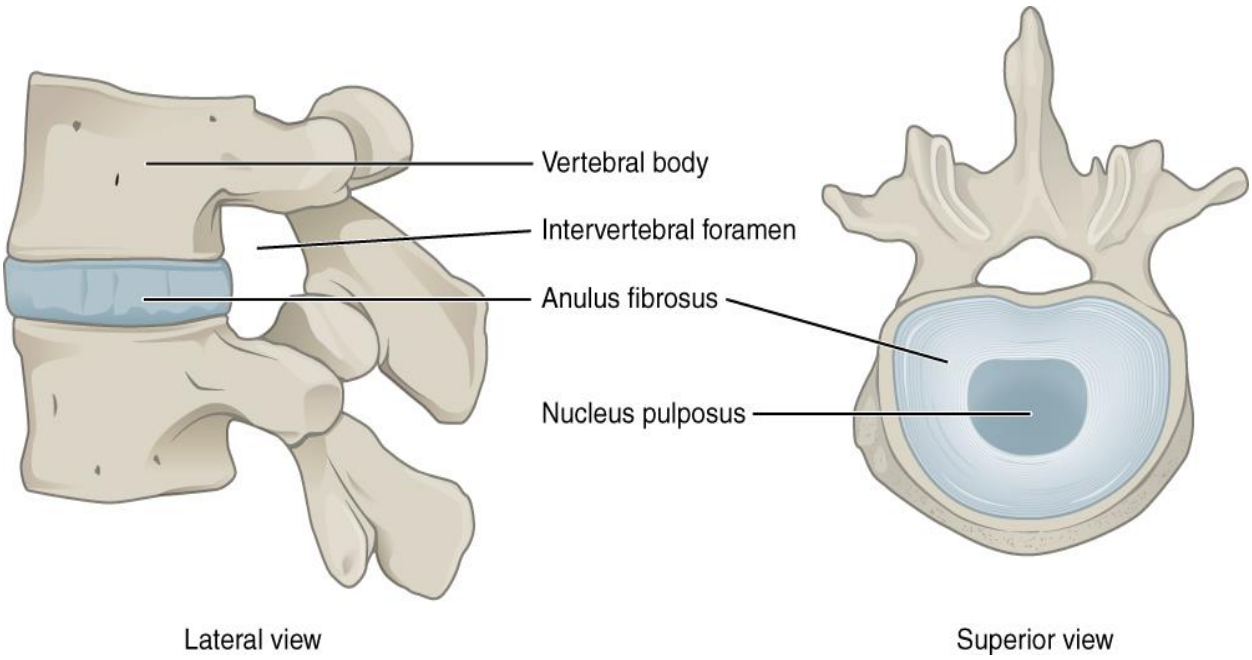
The vertebral arch forms the posterior portion of each vertebra. It consists of four parts, the right and left pedicles and the right and left laminae. Each pedicle forms one of the lateral sides of the vertebral arch. The pedicles are anchored to the posterior side of the vertebral body. Each lamina forms part of the posterior roof of the vertebral arch. The large opening between the vertebral arch and body is the vertebral foramen, which contains the spinal cord. In the intact vertebral column, the vertebral

foramina of all of the vertebrae align to form the vertebral (spinal) canal, which serves as the bony protection and passageway for the spinal cord down the back. When the vertebrae are aligned together in the vertebral column, notches in the margins of the pedicles of adjacent vertebrae together form an intervertebral foramen, the opening through which a spinal nerve exits from the vertebral column.

Seven processes arise from the vertebral arch. Each paired transverse process projects laterally and arises from the junction point between the pedicle and lamina. The single spinous process (vertebral spine) projects posteriorly at the midline of the back. The vertebral spines can easily be felt as a series of bumps just under the skin down the middle of the back. The transverse and spinous processes serve as important muscle attachment sites. A superior articular process extends or faces upward, and an inferior articular process faces or projects downward on each side of a vertebrae. The paired superior articular processes of one vertebra join with the corresponding paired inferior articular processes from the next higher vertebra. These junctions form slightly moveable joints between the adjacent vertebrae. The shape and orientation of the articular processes vary in different regions of the vertebral column and play a major role in determining the type and range of motion available in each region.



Parts of a Typical Vertebra. A typical vertebra consists of a body and a vertebral arch. The arch is formed by the paired pedicles and paired laminae. Arising from the vertebral arch are the transverse, spinous, superior articular, and inferior articular processes. The vertebral foramen provides for passage of the spinal cord. Each spinal nerve exits through an intervertebral foramen, located between adjacent vertebrae. Intervertebral discs unite the bodies of adjacent vertebrae.



Intervertebral Disc. The bodies of adjacent vertebrae are separated and united by an intervertebral disc, which provides padding and allows for movements between adjacent vertebrae. The disc consists of a fibrous outer layer called the anulus fibrosus and a gel-like center called the nucleus pulposus. The intervertebral foramen is the opening formed between adjacent vertebrae for the exit of a spinal nerve.

REGIONAL MODIFICATIONS OF VERTEBRAE

In addition to the general characteristics of a typical vertebra described above, vertebrae also display characteristic size and structural features that vary between the different vertebral column regions. Thus, cervical vertebrae are smaller than lumbar vertebrae due to differences in the proportion of body weight that each supports. Thoracic vertebrae have sites for rib attachment, and the vertebrae that give rise to the sacrum and coccyx have fused together into single bones.

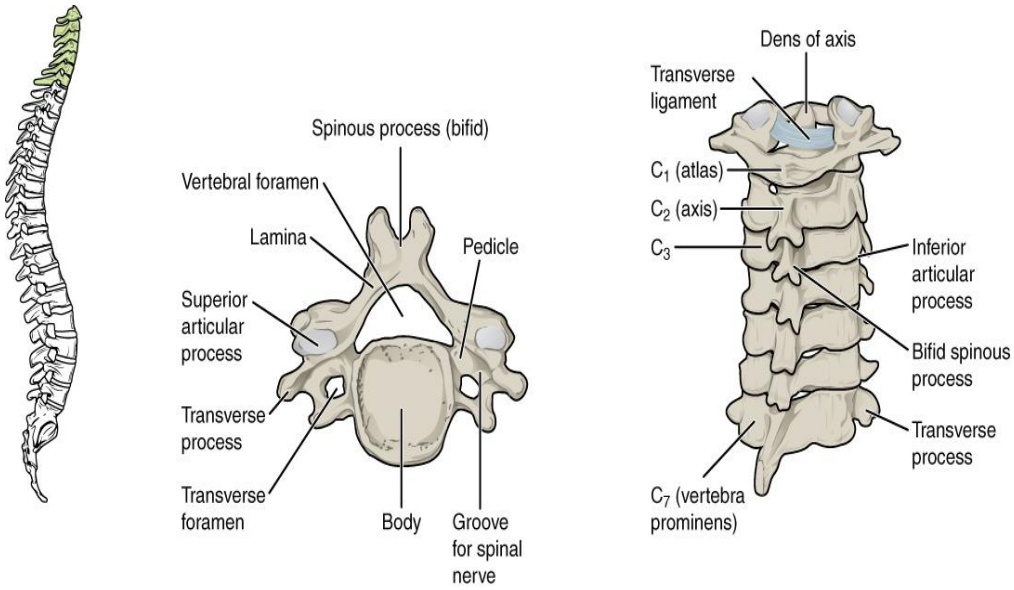
CERVICAL VERTEBRAE

Typical cervical vertebrae, such as C4 or C5, have several characteristic features that differentiate them from thoracic or lumbar vertebrae. Cervical vertebrae have a small body, reflecting the fact that they carry the least amount of body weight. Cervical vertebrae usually have a bifid (Y-shaped) spinous process. The spinous processes of the C3–C6 vertebrae are short, but the spine of C7 is much longer. You can find these vertebrae by running your finger down the midline of the posterior neck until you encounter the prominent C7 spine located at the base of the neck. The transverse processes of the cervical vertebrae are sharply curved (U-shaped) to allow for passage of the cervical spinal nerves. Each transverse process also has an opening called the transverse foramen. An important artery that supplies

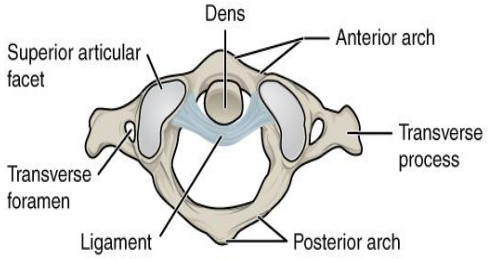
the brain ascends up the neck by passing through these openings. The superior and inferior articular processes of the cervical vertebrae are flattened and largely face upward or downward, respectively.

The first and second cervical vertebrae are further modified, giving each a distinctive appearance. The first cervical (C1) vertebra is also called the atlas, because this is the vertebra that supports the skull on top of the vertebral column (in Greek mythology, Atlas was the god who supported the heavens on his shoulders). The C1 vertebra does not have a body or spinous process. Instead, it is ring-shaped, consisting of an anterior arch and a posterior arch. The transverse processes of the atlas are longer and extend more laterally than do the transverse processes of any other cervical vertebrae. The superior articular processes face upward and are deeply curved for articulation with the occipital condyles on the base of the skull. The inferior articular processes are flat and face downward to join with the superior articular processes of the C2 vertebra.

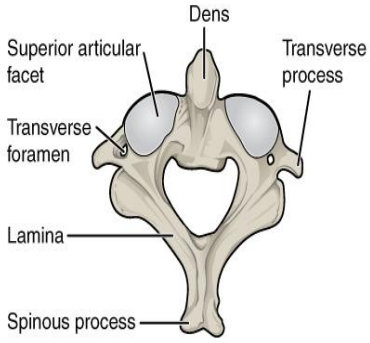
The second cervical (C2) vertebra is called the axis, because it serves as the axis for rotation when turning the head toward the right or left. The axis resembles typical cervical vertebrae in most respects, but is easily distinguished by the dens (odontoid process), a bony projection that extends upward from the vertebral body. The dens joins with the inner aspect of the anterior arch of the atlas, where it is held in place by transverse ligament.



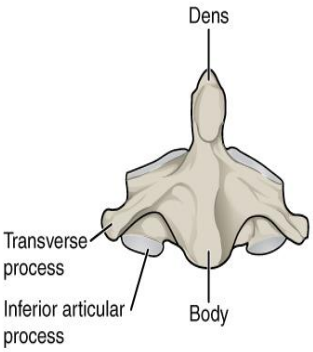
Structure of a typical cervical vertebra



Superior view of atlas



Superior view of axis



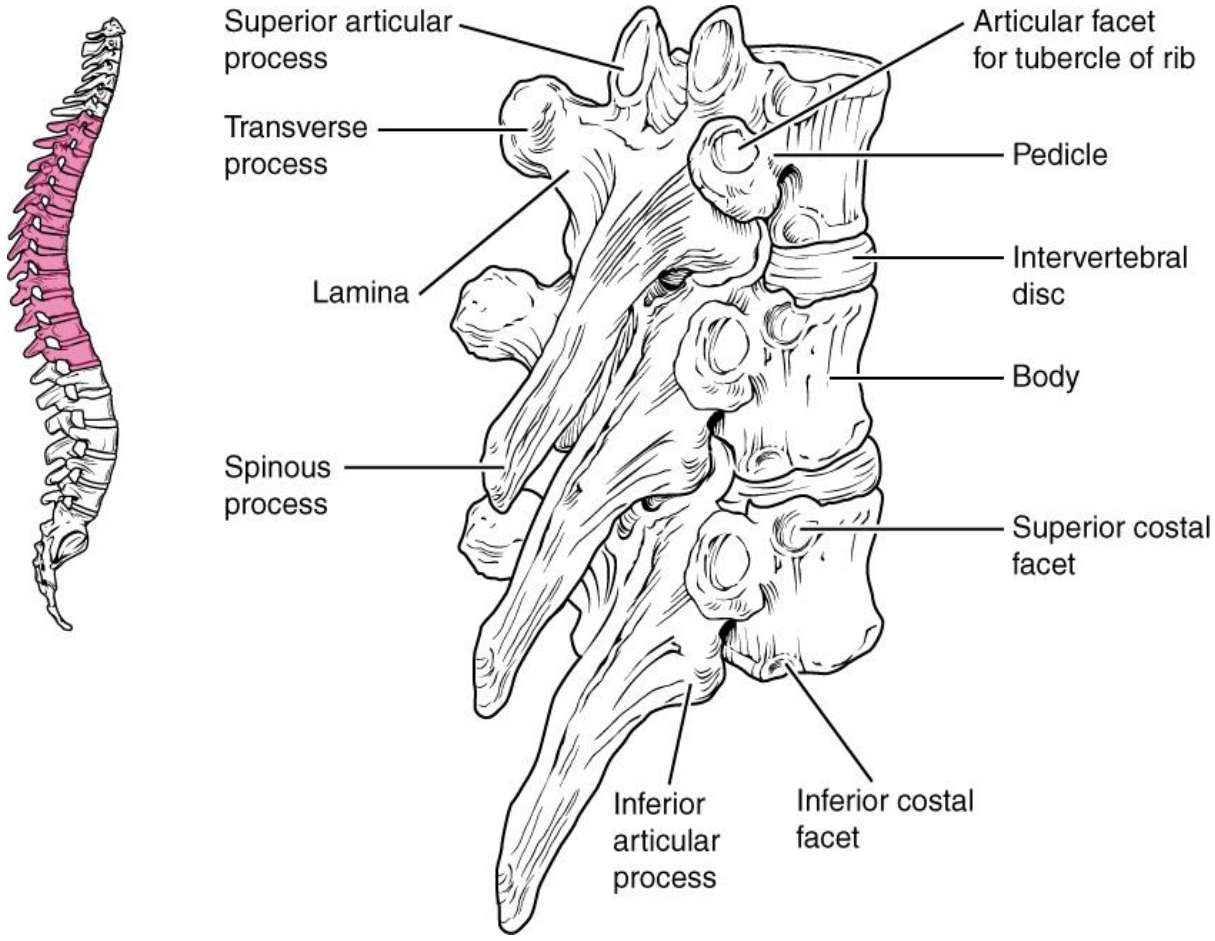
Anterior view of axis

Cervical Vertebrae. A typical cervical vertebra has a small body, a bifid spinous process, transverse processes that have a transverse foramen and are curved for spinal nerve passage. The atlas (C1 vertebra) does not have a body or spinous process. It consists of an anterior and a posterior arch and elongated transverse processes. The axis (C2 vertebra) has the upward projecting dens, which articulates with the anterior arch of the atlas.

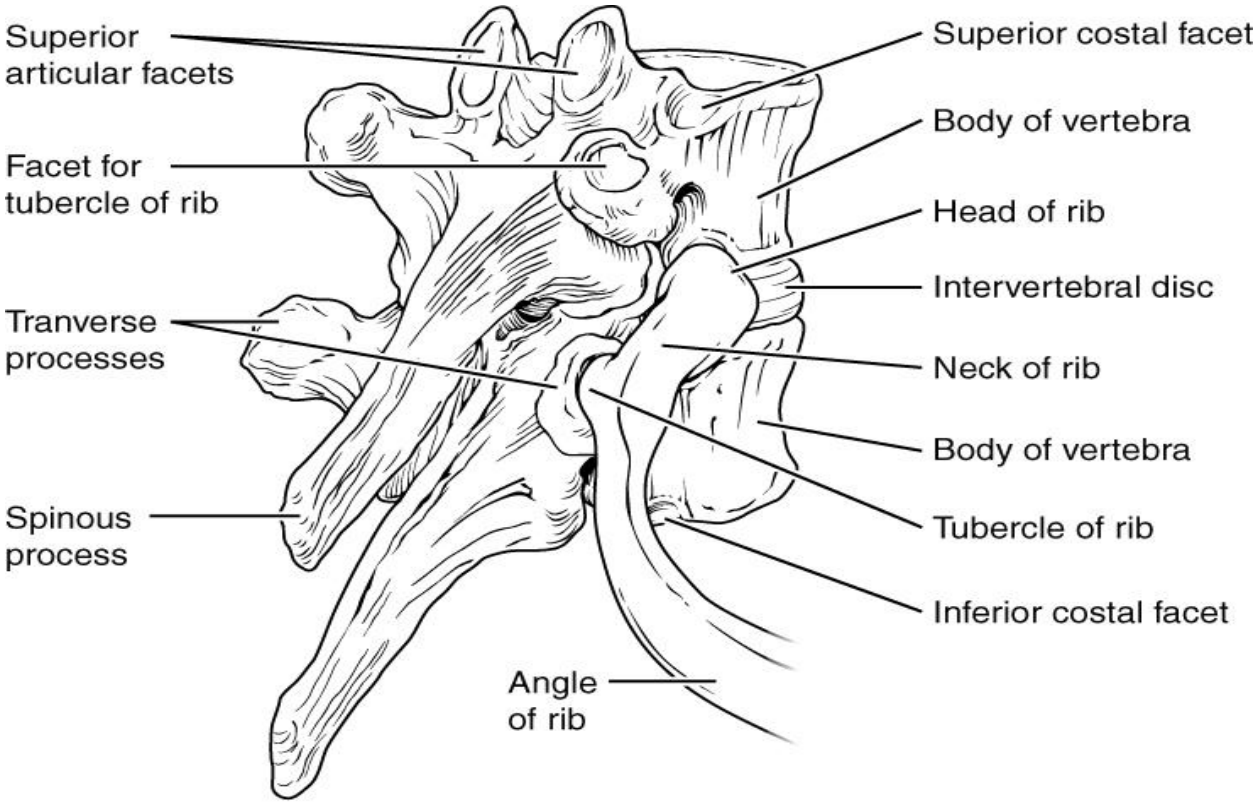
THORACIC VERTEBRAE

The bodies of the thoracic vertebrae are larger than those of cervical vertebrae. The characteristic feature for a typical midthoracic vertebra is the spinous process, which is long and has a pronounced downward angle that causes it to overlap the next inferior vertebra. The superior articular processes of thoracic vertebrae face anteriorly and the inferior processes face posteriorly. These orientations are important determinants for the type and range of movements available to the thoracic region of the vertebral column.

Thoracic vertebrae have several additional articulation sites, each of which is called a facet, where a rib is attached. Most thoracic vertebrae have two facets located on the lateral sides of the body, each of which is called a costal facet (costal = "rib"). These are for articulation with the head (end) of a rib. An additional facet is located on the transverse process for articulation with the tubercle of a rib.



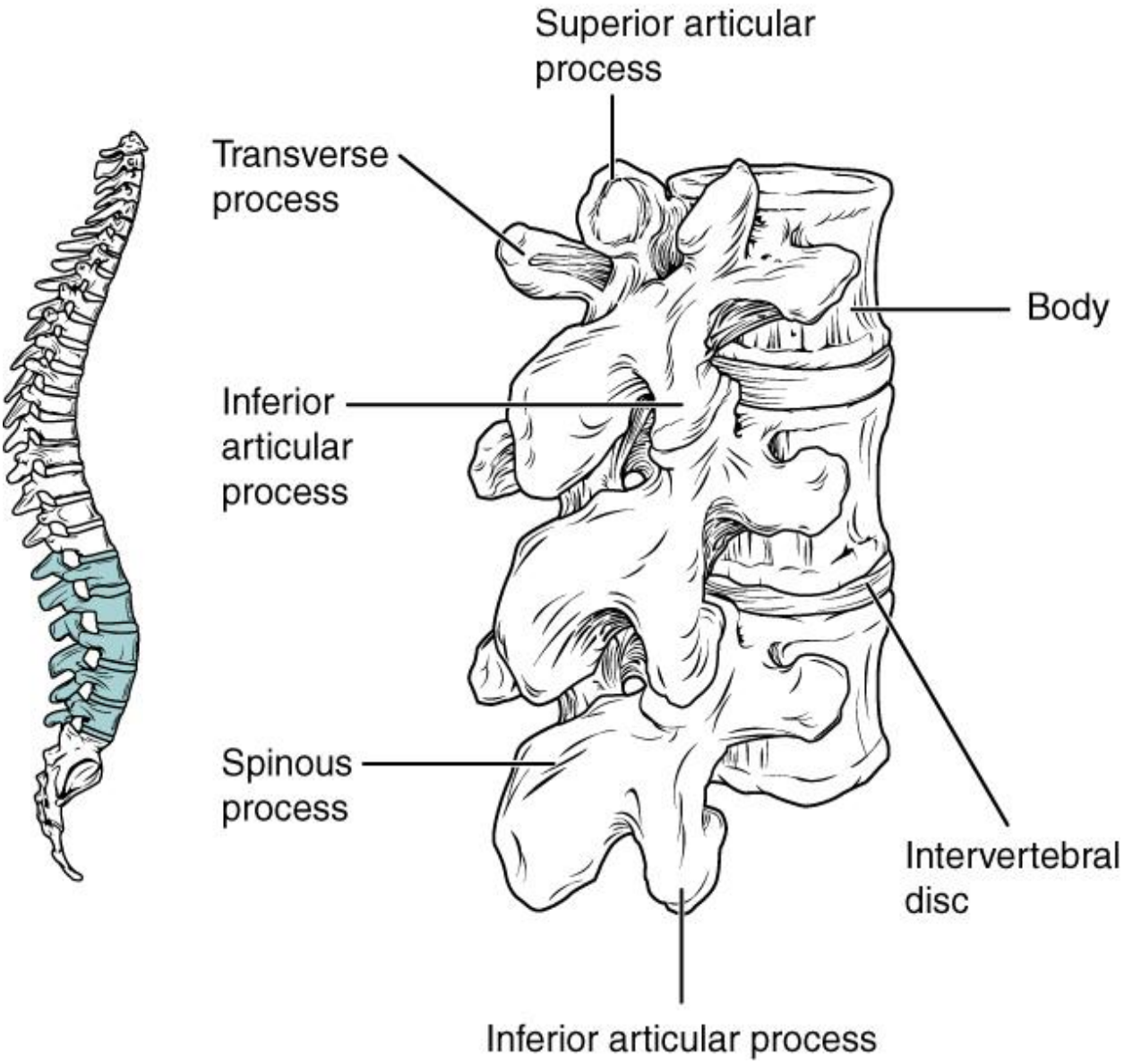
Thoracic Vertebrae. A typical thoracic vertebra is distinguished by the spinous process, which is long and projects downward to overlap the next inferior vertebra. It also has articulation sites (facets) on the vertebral body and a transverse process for rib attachment.



Rib Articulation in Thoracic Vertebrae. Thoracic vertebrae have superior and inferior articular facets on the vertebral body for articulation with the head of a rib, and a transverse process facet for articulation with the rib tubercle.

LUMBAR VERTEBRAE

Lumbar vertebrae carry the greatest amount of body weight and are thus characterized by the large size and thickness of the vertebral body. They have short transverse processes and a short, blunt spinous process that projects posteriorly. The articular processes are large, with the superior process facing backward and the inferior facing forward.



Lumbar Vertebrae. Lumbar vertebrae are characterized by having a large, thick body and a short, rounded spinous process.

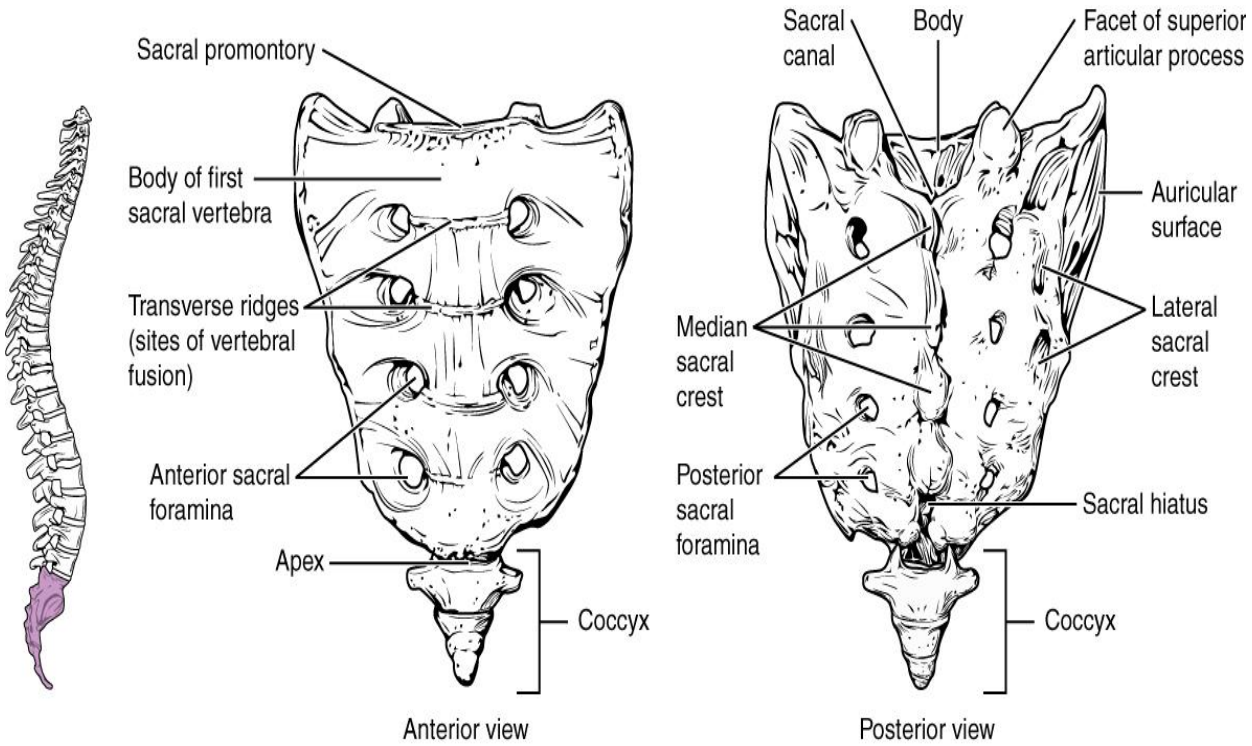
SACRUM AND COCCYX

The sacrum is a triangular-shaped bone that is thick and wide across its superior base where it is weight bearing and then tapers down to an inferior, non-weight bearing apex. It is formed by the fusion of five sacral vertebrae, a process that does not begin until after the age of 20. On the anterior surface of the older adult sacrum, the lines of vertebral fusion can be seen as four transverse ridges. On the posterior surface, running down the midline, is the median sacral crest, a bumpy ridge that is the remnant of the

fused spinous processes (median = “midline”; while medial = “toward, but not necessarily at, the midline”). Similarly, the fused transverse processes of the sacral vertebrae form the lateral sacral crest.

The sacral promontory is the anterior lip of the superior base of the sacrum. Lateral to this is the roughened auricular surface, which joins with the ilium portion of the hipbone to form the immobile sacroiliac joints of the pelvis. Passing inferiorly through the sacrum is a bony tunnel called the sacral canal, which terminates at the sacral hiatus near the inferior tip of the sacrum. The anterior and posterior surfaces of the sacrum have a series of paired openings called sacral foramina (singular = foramen) that connect to the sacral canal. Each of these openings is called a posterior (dorsal) sacral foramen or anterior (ventral) sacral foramen. These openings allow for the anterior and posterior branches of the sacral spinal nerves to exit the sacrum. The superior articular process of the sacrum, one of which is found on either side of the superior opening of the sacral canal, articulates with the inferior articular processes from the L5 vertebra.

The coccyx, or tailbone, is derived from the fusion of four very small coccygeal vertebrae. It articulates with the inferior tip of the sacrum. It is not weight bearing in the standing position, but may receive some body weight when sitting.



Sacrum and Coccyx. The sacrum is formed from the fusion of five sacral vertebrae, whose lines of fusion are indicated by the transverse ridges. The fused spinous processes form the median sacral crest, while the lateral sacral crest arises from the fused transverse processes. The coccyx is formed by the fusion of four small coccygeal vertebrae.

INTERVERTEBRAL DISCS AND LIGAMENTS OF THE VERTEBRAL COLUMN

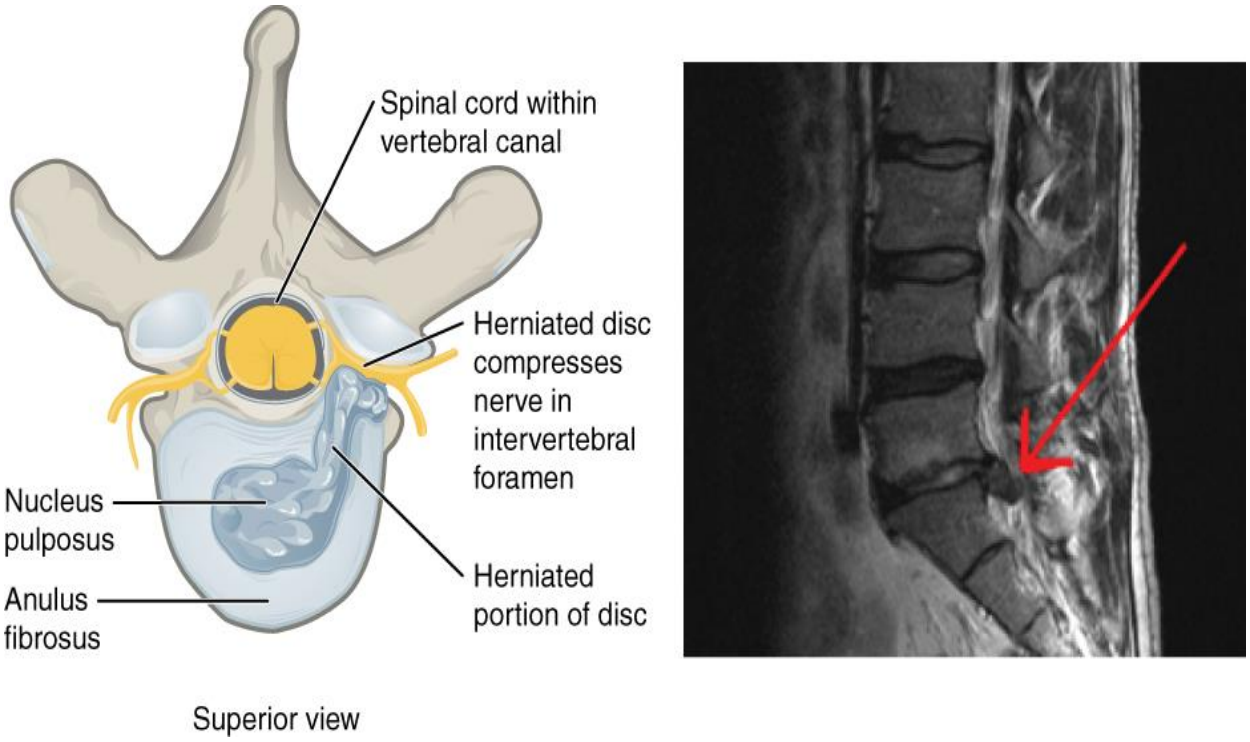
The bodies of adjacent vertebrae are strongly anchored to each other by an intervertebral disc. This structure provides padding between the bones during weight bearing, and because it can change shape, also allows for movement between the vertebrae. Although the total amount of movement available between any two adjacent vertebrae is small, when these movements are summed together along the entire length of the vertebral column, large body movements can be produced. Ligaments that extend along the length of the vertebral column also contribute to its overall support and stability.

INTERVERTEBRAL DISC

An intervertebral disc is a fibrocartilaginous pad that fills the gap between adjacent vertebral bodies. Each disc is anchored to the bodies of its adjacent vertebrae, thus strongly uniting these. The discs also provide padding between vertebrae during weight bearing. Because of this, intervertebral discs are thin in the cervical region and thickest in the lumbar region, which carries the most body weight. In total, the intervertebral discs account for approximately 25 percent of your body height between the top of the pelvis and the base of the skull. Intervertebral discs are also flexible and can change shape to allow for movements of the vertebral column.

Each intervertebral disc consists of two parts. The anulus fibrosus is the tough, fibrous outer layer of the disc. It forms a circle (anulus = “ring” or “circle”) and is firmly anchored to the outer margins of the adjacent vertebral bodies. Inside is the nucleus pulposus, consisting of a softer, more gel-like material. It has a high water content that serves to resist compression and thus is important for weight bearing. With increasing age, the water content of the nucleus pulposus gradually declines. This causes the disc to become thinner, decreasing total body height somewhat, and reduces the flexibility and range of motion of the disc, making bending more difficult.

The gel-like nature of the nucleus pulposus also allows the intervertebral disc to change shape as one vertebra rocks side to side or forward and back in relation to its neighbors during movements of the vertebral column. Thus, bending forward causes compression of the anterior portion of the disc but expansion of the posterior disc. If the posterior anulus fibrosus is weakened due to injury or increasing age, the pressure exerted on the disc when bending forward and lifting a heavy object can cause the nucleus pulposus to protrude posteriorly through the anulus fibrosus, resulting in a herniated disc (“ruptured” or “slipped” disc). The posterior bulging of the nucleus pulposus can cause compression of a spinal nerve at the point where it exits through the intervertebral foramen, with resulting pain and/or muscle weakness in those body regions supplied by that nerve. The most common sites for disc herniation are the L4/L5 or L5/S1 intervertebral discs, which can cause sciatica, a widespread pain that radiates from the lower back down the thigh and into the leg. Similar injuries of the C5/C6 or C6/C7 intervertebral discs, following forcible hyperflexion of the neck from a collision accident or football injury, can produce pain in the neck, shoulder, and upper limb.



Herniated Intervertebral Disc. Weakening of the anulus fibrosus can result in herniation (protrusion) of the nucleus pulposus and compression of a spinal nerve, resulting in pain and/or muscle weakness in the body regions supplied by that nerve.

LIGAMENTS OF THE VERTEBRAL COLUMN

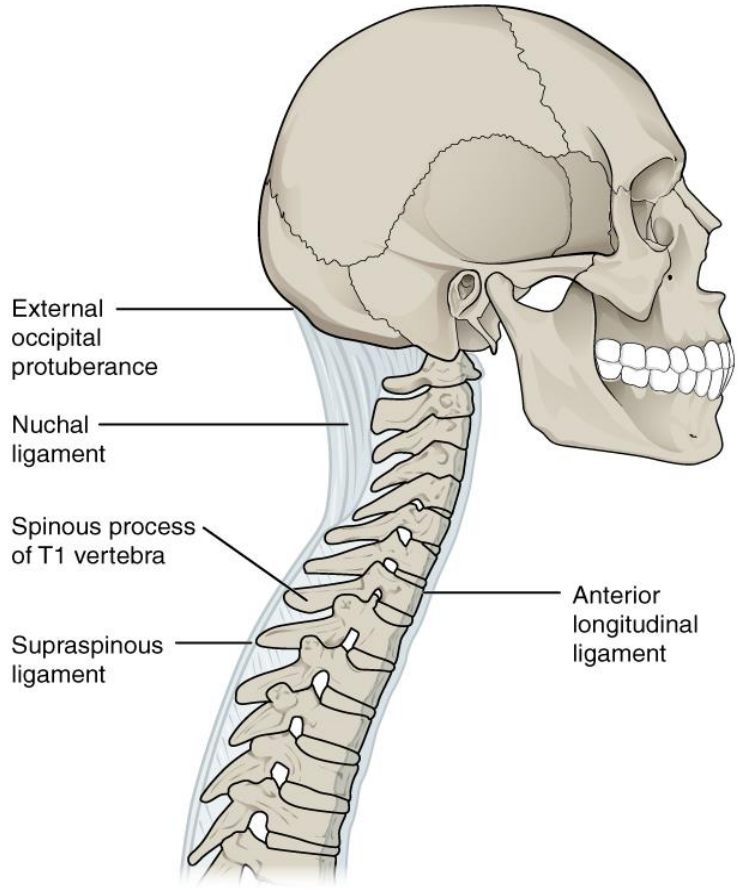
Adjacent vertebrae are united by ligaments that run the length of the vertebral column along both its posterior and anterior aspects. These serve to resist excess forward or backward bending movements of the vertebral column, respectively.

The anterior longitudinal ligament runs down the anterior side of the entire vertebral column, uniting the vertebral bodies. It serves to resist excess backward bending of the vertebral column. Protection against this movement is particularly important in the neck, where extreme posterior bending of the head and neck can stretch or tear this ligament, resulting in a painful whiplash injury. Prior to the mandatory installation of seat headrests, whiplash injuries were common for passengers involved in a rear-end automobile collision.

The supraspinous ligament is located on the posterior side of the vertebral column, where it interconnects the spinous processes of the thoracic and lumbar vertebrae. This strong ligament supports the vertebral column during forward bending motions. In the posterior neck, where the cervical spinous processes are short, the supraspinous ligament expands to become the nuchal ligament (nuchae = “nape” or “back of the neck”). The nuchal ligament is attached to the cervical spinous

processes and extends upward and posteriorly to attach to the midline base of the skull, out to the external occipital protuberance. It supports the skull and prevents it from falling forward. This ligament is much larger and stronger in four-legged animals such as cows, where the large skull hangs off the front end of the vertebral column. You can easily feel this ligament by first extending your head backward and pressing down on the posterior midline of your neck. Then tilt your head forward and you will fill the nuchal ligament popping out as it tightens to limit anterior bending of the head and neck.

Additional ligaments are located inside the vertebral canal, next to the spinal cord, along the length of the vertebral column. The posterior longitudinal ligament is found anterior to the spinal cord, where it is attached to the posterior sides of the vertebral bodies. Posterior to the spinal cord is the ligamentum flavum ("yellow ligament"). This consists of a series of short, paired ligaments, each of which interconnects the lamina regions of adjacent vertebrae. The ligamentum flavum has large numbers of elastic fibers, which have a yellowish color, allowing it to stretch and then pull back. Both of these ligaments provide important support for the vertebral column when bending forward.



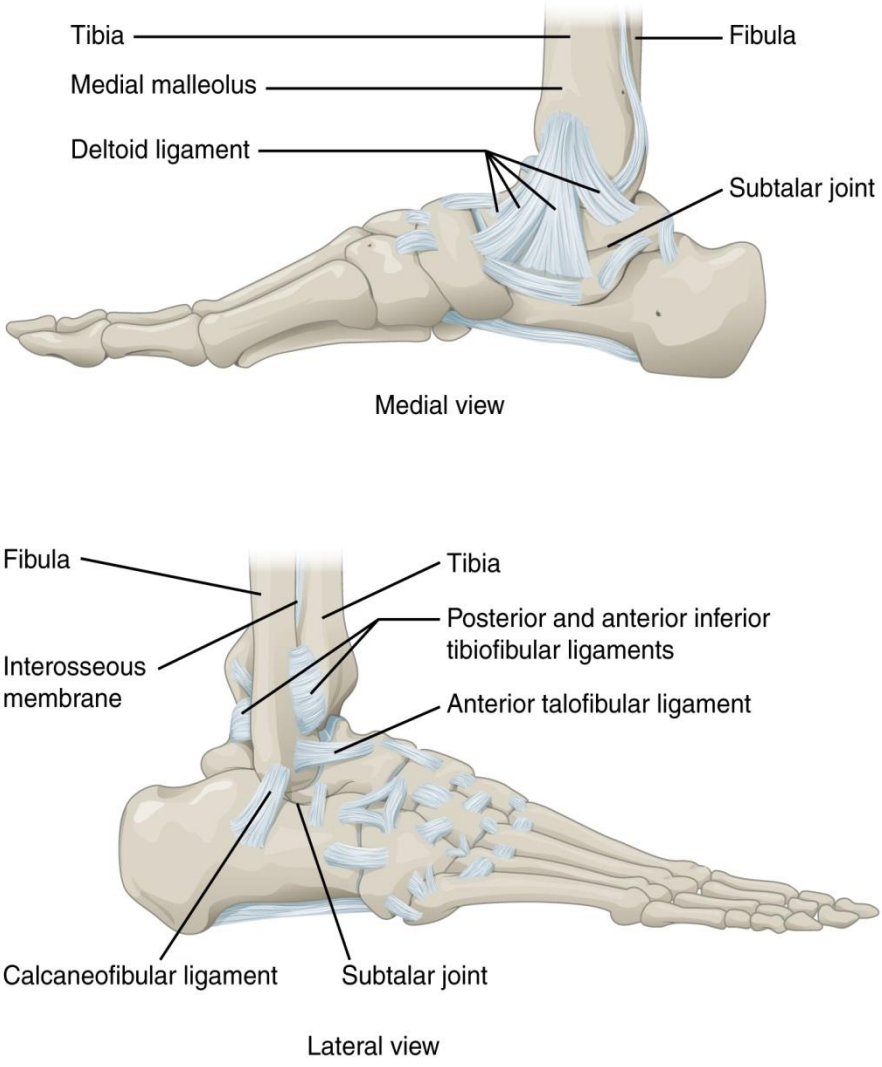
Ligaments of Vertebral Column. The anterior longitudinal ligament runs the length of the vertebral column, uniting the anterior sides of the vertebral bodies. The supraspinous ligament connects the spinous processes of the thoracic and lumbar vertebrae. In the posterior neck, the supraspinous ligament enlarges to form the nuchal ligament, which attaches to the cervical spinous processes and to the base of the skull.

ANKLE AND FOOT JOINTS

The ankle is formed by the talocrural joint. It consists of the articulations between the talus bone of the foot and the distal ends of the tibia and fibula of the leg (crural = “leg”). The superior aspect of the talus bone is square-shaped and has three areas of articulation. The top of the talus articulates with the inferior tibia. This is the portion of the ankle joint that carries the body weight between the leg and foot. The sides of the talus are firmly held in position by the articulations with the medial malleolus of the tibia and the lateral malleolus of the fibula, which prevent any side-to-side motion of the talus. The ankle is thus a uniaxial hinge joint that allows only for dorsiflexion and plantar flexion of the foot.

Additional joints between the tarsal bones of the posterior foot allow for the movements of foot inversion and eversion. Most important for these movements is the subtalar joint, located between the talus and calcaneus bones. The joints between the talus and navicular bones and the calcaneus and cuboid bones are also important contributors to these movements. All of the joints between tarsal bones are plane joints. Together, the small motions that take place at these joints all contribute to the production of inversion and eversion foot motions.

Like the hinge joints of the elbow and knee, the talocrural joint of the ankle is supported by several strong ligaments located on the sides of the joint. These ligaments extend from the medial malleolus of the tibia or lateral malleolus of the fibula and anchor to the talus and calcaneus bones. Since they are located on the sides of the ankle joint, they allow for dorsiflexion and plantar flexion of the foot. They also prevent abnormal side-to-side and twisting movements of the talus and calcaneus bones during eversion and inversion of the foot. On the medial side is the broad deltoid ligament. The deltoid ligament supports the ankle joint and also resists excessive eversion of the foot. The lateral side of the ankle has several smaller ligaments. These include the anterior talofibular ligament and the posterior talofibular ligament, both of which span between the talus bone and the lateral malleolus of the fibula, and the calcaneofibular ligament, located between the calcaneus bone and fibula. These ligaments support the ankle and also resist excess inversion of the foot.



Ankle Joint. The talocrural (ankle) joint is a uniaxial hinge joint that only allows for dorsiflexion or plantar flexion of the foot. Movements at the subtalar joint, between the talus and calcaneus bones, combined with motions at other intertarsal joints, enables eversion/inversion movements of the foot. Ligaments that unite the medial or lateral malleolus with the talus and calcaneus bones serve to support the talocrural joint.

JOINTS

The ankle is the most frequently injured joint in the body, with the most common injury being an inversion ankle sprain. A sprain is the stretching or tearing of the supporting ligaments. Excess inversion causes the talus bone to tilt laterally, thus damaging the ligaments on the lateral side of the ankle. The anterior talofibular ligament is most commonly injured, followed by the calcaneofibular ligament. In severe inversion injuries, the forceful lateral movement of the talus not only ruptures the lateral ankle ligaments, but also fractures the distal fibula.

Less common are eversion sprains of the ankle, which involve stretching of the deltoid ligament on the medial side of the ankle. Forcible eversion of the foot, for example, with an awkward landing from a jump or when a football player has a foot planted and is hit on the lateral ankle, can result in a Pott's fracture and dislocation of the ankle joint. In this injury, the very strong deltoid ligament does not tear, but instead shears off the medial malleolus of the tibia. This frees the talus, which moves laterally and fractures the distal fibula. In extreme cases, the posterior margin of the tibia may also be sheared off.

Above the ankle, the distal ends of the tibia and fibula are united by a strong syndesmosis formed by the interosseous membrane and ligaments at the distal tibiofibular joint. These connections prevent separation between the distal ends of the tibia and fibula and maintain the talus locked into position between the medial malleolus and lateral malleolus. Injuries that produce a lateral twisting of the leg on top of the planted foot can result in stretching or tearing of the tibiofibular ligaments, producing a syndesmotic ankle sprain or "high ankle sprain."

Philosophy

What is Yoga?

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word 'Yoga' is derived from the Sanskrit root 'Yuj', meaning 'to join' or 'to yoke' or 'to unite'. As per Yogic scriptures the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, Man & Nature. According to modern scientists, everything in the universe is just a manifestation of the same quantum firmament. One who experiences this oneness of existence is said to be in yoga, and is termed as a yogi, having attained to a state of freedom referred to as mukti, nirvana or moksha. Thus the aim of Yoga is Self-realization, to overcome all kinds of sufferings leading to 'the state of liberation' (Moksha) or 'freedom' (Kaivalya). Living with freedom in all walks of life, health and harmony shall be the main objectives of Yoga practice. "Yoga" also refers to an inner science comprising of a variety of methods through which human beings can realize this union and achieve mastery over their destiny. Yoga, being widely considered as an 'immortal cultural outcome' of Indus Saraswati Valley civilization – dating back to 2700 B.C., has proved itself catering to both material and spiritual upliftment of humanity. Basic humane values are the very identity of Yoga Sadhana.

A Brief History and Development of Yoga

The practice of Yoga is believed to have started with the very dawn of civilization. The science of yoga has its origin thousands of years ago, long before the first religions or belief systems were born. In the yogic lore, Shiva is seen as the first yogi or Adiyogi, and the first Guru or Adi Guru.

Several Thousand years ago, on the banks of the lake Kantisarovar in the Himalayas, Adiyogi poured his profound knowledge into the legendary Saptarishis or "seven sages". The sages carried this powerful yogic science to different parts of the world, including Asia, the Middle East, Northern Africa and South America. Interestingly, modern scholars have noted and marvelled at the close parallels found between ancient cultures across the globe. However, it was in India that the yogic system found its fullest expression. Agastya, the Saptarishi who travelled across the Indian subcontinent, crafted this culture around a core yogic way of life.

A number of seals and fossil remains of Indus Saraswati valley civilization with Yogic motifs and figures performing yoga indicate the presence of Yoga in India in the ancient times. The phallic symbols, seals of idols of mother Goddess are suggestive of Tantra Yoga. Presence of Yoga is available in folk traditions, Indus valley civilization, Vedic and Upanishadic heritage, Buddhist and Jain traditions, Darshanas, epics of Mahabharat and Ramayana, theistic traditions of Shaivas, Vaishnavas, and Tantric traditions. In addition, there was a primordial or pure Yoga which has been manifested in mystical traditions of South Asia. This was the time when Yoga was being practiced under the direct guidance of Guru and its

spritual value was given special importance. It was a part of Upasana and yoga sadhana was inbuilt in their rituals. Sun was given highest importance during the vedic period. The practice of 'Surya namaskara' may have been invented later due to this influence. Pranayama was a part of daily ritual and to offer the oblation. Though Yoga was being practiced in the pre-Vedic period, the great Sage Maharshi Patanjali systematized and codified the then existing practices of Yoga, its meaning and its related knowledge through his Yoga Sutras. After Patanjali, many Sages and Yoga Masters contributed greatly for the preservation and development of the field through their well documented practices and literature.

Evolution of Yoga

Historical evidences of the existence of Yoga were seen in the pre-Vedic period (2700 B.C.), and thereafter till Patanjali's period. The main sources, from which we get the information about Yoga practices and the related literature during this period, are available in Vedas (4), Upanishads(108), Smritis, teachings of Buddhism, Jainism, Panini, Epics (2), Puranas (18) etc.

Tentatively, the period between 500 BC - 800 A.D. is considered as the **Classical period** which is also considered as the most fertile and prominent period in the history and development of Yoga. During this period, commentaries of Vyasa on Yoga Sutras and Bhagawadgita etc. came into existence.This period can be mainly dedicated to two great religious teachers of India –Mahavir and Buddha. The concept of Five great vows – Pancha mahavrata- by Mahavir and Ashta Magga or eightfold path by Buddha - can be well considered as early nature of Yoga sadhana. We find its more explicit explanation in Bhagawadgita which has elaborately presented the concept of Gyan yoga, Bhakti yoga and Karma Yoga. These three types of yoga are still the highest example of human wisdom and and even to day people find peace by following the methods as shown in Gita. Patanjali's yoga sutra besides containing various aspects of yoga, is mainly identified with eight fold path of Yoga. The very important commentary on Yoga sutra by Vyasa was also written. During this very period the aspect of mind was given importance and it was clearly brought out through Yoga sadhana, Mind and body both can be brought under control to experience equanimity.

The period between 800 A.D. - 1700 A.D. has been recognized as the **Post Classical period** wherein the teachings of great Acharyatrayas-Adi Shankracharya, Ramanujacharya, Madhavacharya-were prominent during this period. The teachings of Suradasa, Tulasidasa, Purandardasa, Mirabai were the great contributors during this period. The Natha Yogis of Hathayoga Tradition like Matsyendaranatha, Gorkshanatha, Cauranginatha, Swatmaram Suri, Gheranda, Shrinivasa Bhatt are some of the great personalities who popularized the Hatha Yoga practices during this period.

The period between 1700 - 1900 A.D. is considered as **Modern period** in which the great Yogacharyas-Ramana Maharshi, Ramakrishna Paramhansa, Paramhansa Yogananda, Vivekananda etc. have contributed for the development of Raja Yoga.This was the period when Vedanta, Bhakti yoga,

Nathayoga or Hatha-yoga flourished. The Shadanga-yoga of Gorakshashatakam, Chaturanga-yoga of Hathayogapradipika, Saptanga-yoga of Gheranda Samhita, were the main tenents of Hatha-yoga.

Now in the **contemporary times**, everybody has conviction about yoga practices towards the preservation, maintenance and promotion of health. Yoga has spread all over the world by the teachings of great personalities like Swami Shivananda, Shri T.Krishnamacharya, Swami Kuvalayananda, Shri Yogendara, Swami Rama, Sri Aurobindo, Maharshi Mahesh Yogi, Acharya Rajanish, Pattabhi Jois, BKS. Iyengar, Swami Satyananda Sarasvati and the likes.

For many, the practice of yoga is restricted to Hatha Yoga and Asanas (postures). However, among the Yoga Sutras, just three sutras are dedicated to asanas. fundamentally, hatha yoga is a preparatory process so that the body can sustain higher levels of energy. The process begins with the body, then the breath, the mind, and the inner self.

Yoga is also commonly understood as a therapy or exercise system for health and fitness. While physical and mental health are natural consequences of yoga, the goal of yoga is more far-reaching. "Yoga is about harmonizing oneself with the universe. It is the technology of aligning individual geometry with the cosmic, to achieve the highest level of perception and harmony."

Yoga does not adhere to any particular religion, belief system or community; it has always been approached as a technology for inner wellbeing. Anyone who practices yoga with involvement can reap its benefits, irrespective of one's faith, ethnicity or culture.Traditional Schools of Yoga :These different Philosophies, Traditions, lineages and Guru-shishya paramparas of Yoga lead to the emergence of differnt Traditional Schools of Yoga e.g. Jnana-yoga, Bhakti-yoga, Karma-yoga, Dhyana-yoga, Patanjala-yoga, Kundalini-yoga, Hatha-yoga, Mantra-yoga, Laya-yoga, Raja-yoga, Jain-yoga, Bouddha-yoga etc. Each school has its own principles and practices leading to altimate aim and objectives of Yoga.

Yogic Practices for Health and Wellness: The widely practiced Yoga Sadhanas (Practices) are: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana (Meditation), Samadhi /Samyama, Bandhas & Mudras, Shat-karmas, Yukta-ahara, Yukta karma, Mantra japa, etc.Yama's are restraints and Niyama's are observances. These are considered to be pre-requisits for the Yoga Sadhanas (Practices). Asanas, capable of bringing about stability of body and mind ' kuryat-tad-asanam-sthairyam...' , consists in adopting various body (psycho-physical) patterns, giving ability to maintain a body position (a stable awareness of one's structural existence) for a considerable length and period of time as well.

Pranayama consists in developing awareness of one's breathing followed by willful regulation of respiration as the functional or vital basis of one's existence. It helps in developing awareness of one's mind and helps to establish control over the mind. In the initial stages, this is done by developing awareness of the 'flow of in-breath and out-breath' (svasa-prasvasa) through nostrils, mouth and other body openings, its internal and external pathways and destinations. Later, this phenomenan is modified, through regulated, controlled and monitored inhalation (svasa) leading to the awareness of the body space/s getting filled (puraka), the space/s remaning in a filled state (kumbhaka) and it's getting emptied (rechaka) during regulated, controlled and monitored exhalation (prasvasa).

Pratyhara indicates dissociation of one's consciousness (withdrawal) from the sense organs which helps one to remain connected with the external objects. Dharana indicates broad based field of attetion (inside the body and mind) which is usually understood as concentration. Dhyana (Meditation) is contemplation (focussed attention inside the body and mind) and Samadhi – integration.

Bandhas and Mudras are practices associated with pranayama. They are viewed as (the) higher Yogic practices mainly consisting on adopting certain body (psycho-physical) patterns along with (s well as) control over respiration.This further facilitates control over mind and paves way for higher yogic attainment.Shat-karmas are de-toxification procedures, help to remove the toxins acumalated in the body and are clinical in nature.

Yuktahara (Right Food and other inputs) advocates appropriate food and food habits for healthy living. However practice of Dhyana (Meditation) helping in self-realization leading to transcendence is considered as the esssence of Yoga Sadhana (The Practice of Yoga).

The Fundamentals of Yoga Sadhana

Yoga works on the level of one's body, mind, emotion and energy. This has given rise to four broad classifications of Yoga: karma yoga, where we utilize the body; bhakti yoga, where we utilize the emotions; gyana yoga, where we utilize the mind and intelect; and kriya yoga, where we utilize the energy.

Each system of Yoga we practice would fall within the gamut of one or more of these categories. Every individual is a unique combination of these four factors. "All the ancient commentaries on Yoga have stressed that it is essential to work under the direction of a Guru." The reason being that only a Guru can mix the appropriate combination of the four fundamental paths, as is necessary for each seeker.Yoga Education:Tradiitionally, Yoga Education was imparted by knowledgeable, experienced, and wise persons in the families (comparable with the education imparted in convents in the west) and then by the Seers (Rishis/Munis/Acharyas) in Ashramas (compared with monastries). Yoga Education, on the other hand, aims at taking care of the individual, the 'Being'. It is presumed that a good, balanced, integrated, truthful, clean, transparent person will be more useful to oneself, family, society, nation, nature and humanity at large. Yoga education is 'Being oriented'. Details of working with 'being oriented' aspect have been outlined in various living traditions and texts and the method contributing to this important field is known as 'Yoga'.

Present days, Yoga Education is being imparted by many eminent Yoga Institutions, Yoga Colleges, Yoga Universites, Yoga Departments in the Universities, Naturopathy colleges and Private trusts & societies. Many Yoga Clinics, Yoga Therapy and Training Centers, Preventive Health Care Units of Yoga, Yoga Research Centers etc. have been established in Hospitals, Dispensaries, Medical Instituitions and Therapetical setups.

Different social customs and rituals in India, the land of Yoga, reflect a love for ecological balance, tolerance towards other systems of thought and a compassionate outlook towards all creations.Yoga Sadhana of all hues and colours is considered panacea for a meaningful life and living. Its orientation to a comprehensive health, both individual and social, makes it a worthy practice for the people of all religions, races and nationalities.

Now-a-days, millions and millions of people across the globe have benefitted by the practice of Yoga which has been preserved and promoted by the great eminent Yoga Masters from ancient time to this date.The practice of Yoga is blossoming, and growing more vibrant every day.

Raja Yoga

Raja yoga aims at controlling chitta vrittis, thought waves or mental modifications. It concerns the mind, its purification and control. Raja yoga is a philosophy and practice of absolute control of mind and its modifications, which teaches us how to transmute the unregenerate nature and attain the state of divinity.

Raja yoga is an exact science; it aims at the harmonious development of the body, mind and soul. Hence it is called raja yoga, king of all yogas. It is also known as ashtanga yoga, yoga with eight limbs. The founder of the ashtanga raja yoga system, Patanjali Maharshi, was not only a philosopher and yogi, but a physician as well. He is said to have lived about three hundred years before Jesus Christ.

The eight limbs of Patanjali's raja yoga are: yama (self-restraint), niyama (religious observances), asana (posture), pranayama (restraint of breath), pratyahara (abstraction of senses), dharana (concentration), dhyana (meditation) and samadhi (super-conscious state). Yama and niyama discipline the senses and purify the mind. Asanas steady the physical body, and bandhas and mudras make the body firm. Pranayama makes the body light and helps to control, regulate and coordinate the subtle forces within the body.

Pranayama or control of breath makes the mind firm and steady and thereby fit for concentration. It removes the veil of rajas (passion) and tamas (inertia) that envelops sattwa (purity), and purifies the nadis (energy channels). The dross of the mind is cleansed by pranayama, just as the dross of gold is got rid of by melting. Nadi shuddhi produces steadiness of mind. Having acquired these qualifications the mind can be withdrawn from the sense objects and concentrated on Brahman. Only then meditation goes on steadily with ease and happiness.

You will have to ascend the ladder of raja yoga patiently through its different rungs and attain the highest summit. If you really aspire to unfold the divinity within and get rid of the meshes of samsara, you must know the technique of thought control which is embodied in the system of raja yoga. You must know the ways of right living, right thinking, right speaking and right acting. You must practice the five rules of yama, right conduct or sadachara.

Raja yoga aims at controlling the mind and its modifications. Knowledge of the ways and habits of the mind, its operations, the laws of the mind and the methods of mind control and mental discipline is very necessary if you want to enjoy real happiness and abiding peace.

In the practice of raja yoga, there is a reversal of the normal outgoing activity of the mind. This requires the turning away of the senses from the objective universe and concentrating on the mind within. Steadiness of mind is very essential for a reversal of the normal outgoing activity of the mind. Unless the mind is first made steady and brought under complete control, it will not be possible to change its course to the opposite direction.

You must know how to withdraw the mind from external objects and fix it on one point. You must know the right method of concentration and meditation. Then alone you can be really happy. Then and then alone, you will attain peace, freedom and perfection. Practice raja yoga, control the thoughts, discipline the mind, meditate regularly and attain independence, immortality, freedom and perfection. The culmination of raja yoga is that state of absolute peace wherein there is neither imagination nor thought. It is stated in the scriptures:

Dhyanam nirvishayam manah.

When the mind becomes nirvishaya (free from thinking of sense objects and their enjoyments), it is meditation.

Benefits of Raja Yoga

Life today is full of stress and strain, tension and nervous irritability, passion and hurry. If one puts into practice a few of the elementary principles of raja yoga, one would be far better equipped to cope with this complex existence.

Raja yoga brings in perfection, peace and lasting happiness. You can have calmness of mind at all times by its practices. You can have a restful sleep, increased energy, vigour, vitality, longevity and a high standard of health. You can turn out efficient work within a short space of time. You can have success in every walk of life. It will infuse in you new strength, confidence and self-reliance. The body and mind will be at your beck and call.

The practice of raja yoga will help you to control your emotions and passions. Lust for power, material greed, sensual excitement, selfishness, passion for wealth and lower appetites have drawn people from their true life in the spirit into the materialistic life. One can regain the lost divine glory if one practices, in right earnest, the principles of yoga. The practice of raja yoga will give you the power to resist temptations and to remove the disturbing elements from the mind. It will enable you to always keep a balanced mind.

Raja yoga will also help you in your profession and daily life. It will increase power of concentration at work. It will remove fatigue, confer serenity and calmness. Through the yogic disciplines, the mind, body and the organ of speech will work together harmoniously.

The discipline of raja yoga provides poise and tranquillity and miraculously rebuilds one's life. A new outlook, better health, greater awareness and a new philosophy rush in and vividly transform one's life.

The path of raja yoga leads from ignorance to wisdom, from weakness to strength, from disharmony to harmony, from hatred to love, from want to fullness, from limitation to infinitude, from diversity to unity, and from imperfection to perfection.

9 obstacles on the path of yoga

The yoga marga the path of righteous living is not a bed of roses for it requires shraddha (trust, faith), veerya (strength and valour), smriti (keen and attentive memory), samadhi (attainment of a deep state of equilibrium) and prajna (preparedness for the highest wisdom).

Yogamaharishi Patañjali is blessed with foresight and cautions the sadhaka that there are many obstacles on the yogic path to kaivalya and offers the solutions to them. In I.30 - I.32 he describes the nine obstacles faced by a sadhaka in their sadhana and enumerates these antaraya or chitta vikshepa as well as the four-fold external manifestations of these internal obstacles. In verse I: 30 he says, ***"vyadhi styana samshaya pramada alasya avirati bhrantidarshanaalabdha bhoomikatwa anavasthitatwani chitta vikshepate antaraya"*** meaning thereby that illness, mental laziness, doubt, procrastination, sloth, sensual craving, false perception, inability to attain and maintain the higher states are the mental obstacles. In the science of yantra, the number nine is an overview number. In this list, we have an extensive overview of the nine antaraya. Let's try to understand the psychology of Maharishi Patañjali. Why is it important to enumerate the obstacles? He points out each obstacle one by one, when he could have easily just mentioned one as an example. It is a wonderful analytical work he has done for us.

The nine obstacles, the antaraya, also known as chitta vikshepa, are mainly created by the mind. The task of yoga is mainly the work of tackling the mind. Yoga uses mind to transcend mind. If yoga is the "cessation of the whirlpools of the mind", it follows that the mind will literally cease to exist in the process. This situation is a threat to the very survival of mind, especially the subconscious mind. When its survival is at stake, the sub-consciousness will put up a good fight. Naturally, as a defense mechanism, the subconscious mind throws up obstacle after obstacle. The strategy is to make the sadhaka give up efforts on this yoga path.

1. **Vyadhi** is the root cause of illness, the first antaraya, is found in the sub-conscious mind. The sub-conscious mind causes even what appears as an accident. What is the nature of this first obstacle vyadhi or disease according to Maharishi Patañjali? The fact that we are born in a body is already a disease, according to the Laghu Yoga Vasishtha which considers the process of birth

and rebirth as the basic psychosomatic disease (sara adija vyadhi). We suffer the sickness of imprisonment in the cycle of birth and rebirth. This disease can only be cured by self-realization or the knowledge of the Self (atma jnana). The guru is the guide, a mentor who helps the chela find the way to cure this eternal disease. To be born in a human body on this planet is not a coincidence. It is rather an incidence. We are born into physical unconsciousness. This is why yoga uses consciousness to create awareness at the physical level through proper use of hatha yoga practices. You get to know where your toes are and what your ankles or hands are feeling. When you stretch, you become aware of your muscles and joints. Hatha yoga practices are tremendous anatomy lessons of an inner nature. However, one cannot stop with asana. Yoga is not asana alone. Disease creates awareness of the body in a negative sense. When illness occurs the patient becomes focused on the infirm body, to the exclusion of anything else. The Vedantic view is "I am not the body". Yet, the body is also the temple where God resides, so it should be kept as beautiful, as clean, and as nicely decorated as possible. Tirumoolar says that the body needs to be made fit to host the Divine as it is the temple of the Divine. Health is not only wealth; it is the coin of the spiritual realm as well.

2. **Styana** is laziness of a mental type. Many are physically active but mentally, very few are capable of truly thoughtful and energetic action. It is also dullness of the mind, mudha. A destructive mind is inert and incapable of positive focus.

3. **Samshaya** is doubt. This doubt or indecision is often related to one's sadhana: "Am I fit for this? Maybe this is not the right path for me. Maybe this is too much for me. It is too tough or too easy" and so on… These are the tricks that the sub-conscious mind plays to lure the sadhak away from sadhana. Maharishi Patañjali advises seekers to use the mind in order to transcend mind.

4. **Pramada** is procrastination and negligence. A story which illustrates this in Hindu tradition is the tale of Lord Ganesha. Shanishwar or Saturn causes torment and bad luck for those who fall prey to his spell. He once tried to catch Ganesha in his net of doom. Ganesha, being not only intelligent but also clever, asked Saturn to come the next day, as he was busy. Shanishwar made Ganesha write down this appointment on a piece of paper. Ganesha wrote "Come back tomorrow". When Saturn came back the next day, the Lord read "Come back tomorrow" and so, with his skillful lateral out-of-the-box thinking, Ganesha escaped Saturn's influence forever. This is a good trick to get out of the unnecessary trouble. In sadhana, however, procrastination is a major obstacle. What is put off today will never get done tomorrow. The mind plays this old trick so well, that one keeps delaying effort towards spiritual growth, thinking, "I'll do it tomorrow". But of course, tomorrow never comes.

5. **Alasya** is sloth. If you are so lazy that you cannot even move, your mind also becomes lazy. Growth is hindered, even retarded. Alasya also implies a certain level of indifference and carelessness which is dangerous to all spiritual aspirations.

6. **Avirati** is indulgence in illusionary, temporal and sensual aspects of life. The mind becomes attached to such things and experiences which impede further progress. Virati implies a mind that is detached, whereas avirati is the opposite. The sub-conscious mind detests "non-detachment". The mind rather feeds itself on attachment. The mind loves indulgence in the sensual moment. This is the opposite of pratyahara where the sensory apparatus is brought under the control of the higher nature through a dispassionate withdrawal of the mind from the senses. Here in avirati the mind is totally lost in insatiable craving.

7. **Bhrantidarshana** are false perceptions and delusions. In epics like the Ramayana and Mahabharata there are several examples of elaborate illusions created to dishearten the main characters, such as Rama or Krishna, or Arjuna. One must always maintain objectivity, especially in spiritual practice. During what seems to be a spiritual experience, one must stand back and ask, "Is this a real experience? Am I really having this 'spiritual' experience?" Or is it a fantasy, an illusion of ego?" A common human frailty is to be caught up in unreal temporal situations. This fantasy world may be magnified in the spiritual path. So many deluded people believe they have had "kundalini arousal" or "chakra opening" experiences. Most of these are not real! How to determine if an experience is truly a spiritual one? There is a test. Every time an experience makes one a better human being – less self-centered, less egotistic, more open, serene, friendly – then the soul is progressing and the experience is one oriented towards growth. If the experience has an after-effect of negativity, then it was not a very high experience.

8. **Alabdhabhumikatwa** is the inability to reach a higher state through one's practice. Each state of growth will be higher than the previous and the practice and focus will also change in an appropriate manner. If one stagnates, then the urge to grow will also die a slow death. All cells have a "death wish" which limits the lifespan. As well there are patterns of biorhythms throughout the life. This ties into the concept of alabdhabhumikatwa in the sense that all have a subconscious wish not to progress. If this is too strong, it creates an inability to attain a higher state in our sadhana.

9. **Anavasthitatwani** is the inability to maintain the one-pointed higher state that has been previously attained. This is a continuation of the previous obstacle in that the sadhaka reaches a higher state, but then slips back due to inability to maintain the intensity of sadhana. Many sports-persons rise to "No.1" position but then find it too hot at the top to handle and slip back into obscurity. It is hard to attain the higher states, but even tougher to maintain oneself in them!

These are the chitta vikshepa, the hindrances of the chitta, the lower mind, which prevent progress on the evolutionary path of yoga. These nine obstacles are barriers to evolutionary transformation. They are a series of last ditch efforts made by the lower mind in its battle for survival. The antaraya prevent the destruction of the lower mind tendencies, blocking further growth in sadhana.

Karma Yoga

The word 'Karma' originated from Sanskrit root 'Kru' which means 'Work' or 'Action'. Karma consists of action we perform consciously or unconsciously & result of that action. Karma (action) is not only the physical work but the process of mental thinking also. When Yoga is added to karma, it becomes a practice of union with one's true self through 'action'.

Hence, every action which brings our awareness inwards to knowing the true self is the part of karma yoga. Another definition of Yoga can be pointed around the word 'Karma' in Bhagavad Gita.

"Yogah Karmasu Kausalam" ~ Bhagavad Gita 2.50

Yoga is an art of getting perfection (kausalam) in every work (Karmasu) of life. This perfection comes in karma with the regular practice of devoting karma to others. Hence, Perfection in karma is considered yoga also.

Karma Yoga is 'path of action', one among 4 paths of Yoga in spiritual practices of Hinduism. Other 3 paths in this series are:

Bhakti Yoga (Path of Devotion)

Jnana Yoga (Path of Knowledge)

Raja Yoga (Path of Discipline).

The path of karma yoga emphasizes on doing 'selfless work' according to dharma (moral duty), not on the consequences of results. A karma yogi treats 'work (karma)' like prayer where there is no outcome desire expect from karma. Performing karma in such a way eliminates violence, ego from the seeker's heart & replace it with love, joy & compassion.

Types of Karma Yoga

Yoga is not karma, but it's the practice to go beyond the karma. Not every karma is considered yoga. Hence, Types of Karma Yoga shows how many ways karma affects us. Karma based on these 2 references, categorized as follows:

A) Intention

B) Timeline

(A) KARMA BASED ON THE INTENTION

Based on what's your intention behind the initiation of work, karma is of following 2 types:

1. *Sakama Karma*

Every single thought or physical action that creates 'mine' or 'your' sense in the person's mind is Sakama karma. This karma reveals the selfish nature of a person. Yoga is not meant for Sakama karma because it keeps us bound in the bondage of karma, while yoga (Karma yoga) freed us from the bondage of karma. Sakama Karma creates egoism, hatred, jealousy in a person's heart consciously or unconsciously.

2. *Nishkama Karma*

Nishkama means Selfless action. The good thing about selfless action is that it breaks the bondage of karma & let ourselves free from the cycle of death & birth. When intention behind karma is not the main aim, a person actually imbibing the path of Nishkama Karma.

Forgiveness, helping, loving thoughts and compassion behavior of humanity is the example of Nishkama or selfless action. The practice of Nishkama karma leads seeker towards renunciation, which further purifies the Chitta.

(B) KARMA BASED ON THE TIMELINE

An action we had performed in the past, performing at the present moment & the result of the action we will get, is another base to categorize karma yoga. On this base, There are three types of Karma Yoga.

1. *Sanchita Karma*

Sanchita is the karma we had performed in the past. The literal meaning of Sanchita is 'Accumulation'. Hence, Sanchita is the set of accumulated actions of the past.

Every person has to go from some set of Karma in their life. As we live in the present, a conclusion (or rest) of this karma starts accumulated as Samsara.

Indeed, sanchita karma is that glimpse of whose can be seen in the present 'Character' of person.It is the Law of Karma – What we do in present accumulate in the past (as Sanchita karma) & appears in our future.

2. *Prarabdha karma*

Prarabdha is that part of karma (performed karma) which is responsible for the present condition of a person.

If you are experiencing something good this moment, it's undoubtedly because of the past karma of yours. Prarabdha karma is only can experiences whether it's good or bad, not changed. It's a debt of our past karma (Sanchita).

3. *Agami Karma*

Agami means forthcoming. This karma is the result of prarabdha karma. It can be modified according to the present of our working.

Out of these 3 Karma, Sanchita and Agami karma is not in our responsibility right now. Krishna tells, Prarabdha Karma is the only responsibility of a person who decides everything.

Conclusion: Karma yoga demands you to work on Prarabdha karma only (Present action), as it's only our moral duty to focus on present condition or work, not past (Sanchita) or future (Agami) karmas.

Trigunas or 3 qualities of Nature

Ayurvedic philosophy provides an idea of the creation of the universe, from which the concept of Trigunas (Tri – 3 and Gunas – Qualities) of Nature is evolved out.

According to the philosophy of Ayurveda, there was just Darkness (un-manifest) in the onset of creation which implies Purusha (Consciousness) and Prakriti (Nature). The universe is the union or combination of Prakriti and Purusha (the Female and male aspects of creation).

Prakriti manifests itself in every gross or subtle, living or non-living, matter in the universe whilst Purusha is the cause behind moment (or life) of that matter.

Both are abstract entities according to Samkhya Philosophy, with Purusha remaining unchanged or inactive and Prakriti staying active and changeable.

What Are Trigunas?

There are 3 forms through which Prakriti manifests itself in a matter, known as Trigunas or 3 qualities of Nature. The word Prakriti also consists of 3 root words

Pra means Sattva Guna

Kr means Rajas Guna

Ti means Tamas Guna

Trigunas combines in different composition to develop the 5 elements of the body, which also known as Pancha Maha-Bhoota.

Look around yourself & within you, every single thing, living or non-living contain characteristics of trigunas.The matter surrounding you is movable, Blood continuously circulates is because of Rajas Guna (activity) present in nature and the body. You able to stop your mind fluctuations for a while in meditation practice, it's only possible because of Tamas Guna (inertia) present in mind.

On the other hand, remember the times when mind swings from here to there, it's because of Rajas Guna. Also, In the state deep meditation, when you feel your inner-self, the joy comes out of it is because of Sattva Guna (balance).

Sattva Guna characteristics

Sattva is the state of balance between activity and the inertia. Sattvic state characteristics are happiness, wisdom, spiritually connected, compassionate, lightness in body & mind, self-control, concentrated, gratitude and selflessness. Sattva Guna symbolizes with white color.

Rajas Guna characteristics

Rajas Guna is known for 'fickling & activity' state among trigunas. Characteristics of Rajas guna are desire, fear, depression, and anxiety, selfish, excited, workaholic, ambitious, chaos, restlessness and angry. Rajas Guna symbolizes with Red color.

Tamas Guna characteristics

It has the nature of being underactive while rajas guna has overactive and sattva has balance. Tamas or TamoGuna is lowest in trigunas. It symbolize with Dark color. It signifies illusion, ignorance, mental dullness, laziness, greed, confusion, attachment, and heaviness.

Trigunas and personality

You might have heard, this/that person has a good personality. What does personality mean?Trigunas have been utilized to explain the concept of personality in the modern age. Trigunas are the primary attributes of your existence as a human being that helps in shaping characteristics of everything of material or immaterial in you. These 3 qualities, in different proportions, lead you to behave, react, conceptualize, and comprehend the nature of your surroundings differently.

The characteristics of inherited Gunas by an individual can be changed due to physical, psychological and social influences. Also, it leads to determination of behaviour of an individual at that particular time. The proportion of each Guna may rise or fall anytime that certainly affects your personality and traits pertaining to a specific Guna or combination of Gunas.

How trigunas affect personality?

Any changes whether it's physical, mental, or psychological occurs in a human being, has the root 5 elements which composed the body. These 5 elements perceived in the body through 5 physical senses. Further, data collected through senses passed through mind, intellect and then modified according to the dominant Guna. Hence, Guna is the final step which influences the Personality of a person.

Trigunas and associated personality

Every person has some ego according to which they perceive processed data according to their intellect (Buddhi). As showing in the above illustration, Trigunas are stemming out of ego, which is also called I-sensor or modifier, decides the personality of a person. Now, in the end, what comes out as a result of raw data (collected through 5 senses) is called the Personality of a person and it depends upon the trigunas which dominant at a particular time.

THE PERSON WITH SATTVA GUNA

Sattva refers to Pure hence indicates your personality type as such. Sattva Guna is the positive and spiritual quality that, when dominant, you have a natural tendency to be kind, caring, and Hence possesses Sattvic Personality.

Sattvic Guna is present in a correct proportion in you if you are:

- Mentally Strong
- Respect your Teachers (Gurus)
- Non-violent
- Kindred
- Self-controlled
- Meditative

A person with dominant Sattva Guna is calm towards his work and duty differentiating between the desirable and undesirable circumstances. The more sattvic your nature is, the more drawn you are to love, compassion, kindness, and attachment to happiness. So you shall remain healthy and disease-free in this state.

There are 7 types of sattvic personality a person is found in. know here which one are you.

THE PERSON WITH RAJAS GUNA

Rajas people are very desirous and full of attachment. Due to their acute self-interest, sometimes they may face difficulties in differentiating between right and wrong. It's called Rajasic Personality.

Rajas Guna is in the balanced proportion if you are:

- Enthusiast
- Deeply Interested
- Dedicated to Work
- Restless
- Self-centered
- Achiever

Raja refers to Passion, which lies in between Sattva and Tamas acting as a catalyst or a bridge. Rajas balance Sattva and Tamas to create the motivation, creativity for inspiring change, movement, and right action. If Rajas Guna in a person got imbalanced, it has a converse effect whose predominance may hype Anger, Agitation, or Anxiety. There are some natural ways to reduce the excess of Rajas guna.

THE PERSON WITH TAMAS GUNA

Tamas means Darkness, which indicates the psychological state of Illusion, negativity, dullness, and inactivity. The state of the dominance of Tamas Guna is indicated by the selfish, uncaring, cynical behavior & hence called Tamasic Personality.

Once you observe a change in your **Tamasik Guna**, you will experience Timely Sleep, Balanced Diet, Openness to others, Appreciative in nature, Concerned about others, Active towards helping others.

A person having imbalanced Tamas Guna can experience its effects in short-lived happiness, materialism, possessive feelings, and a keen desire to harm others.

7 COMBINATIONA BASED ON THE TRIGUNAS

- People with dominant Sattva Guna.
- People with dominant Rajas Guna.
- People with dominant Tamas Guna.
- People with dominant Sattva–Rajas Guna combination.
- People with dominant Sattva–Tamas Guna combination.
- People with dominant Rajas–Tamas Guna combination.
- People with balanced Gunas or with Sattva–Rajas–Tamas Guna combination.

The above list of Gunas shows that Trigunas never exist in isolation in a person and always act in conjunction with each other. Even trigunas compete with each other and dominating guna decides the Personality of a person.

Till now, you would have know which personality belongs you well, based on Trigunas. Now the question arises, how can we manipulate Gunas within us for our and others' wellbeing?

Balancing the Gunas

Gunas in itself is not a physical quantity but its presence can be seen by these 3 means:

a) Action we perform
b) Intention behind the action
c) Reaction

By paying attention to these 3 points, we can work on balancing the Gunas that lay within us.

THE ACTION & THE INTENTION

All action is universally engendered by the attributes (gunas) of primordial nature (prakriti). A man whose self is deluded by egoity thinks, "I'm the doer" – Bhagavad Gita 3:27

Initiation of action begins with the intention behind it. To get the Guna behind the action, Ask yourself these questions every time you begin work:

Why I am doing this (Intention)

How I am doing this (Manifestation)

Sometimes, at a certain stage of life, you might be doing work which has Sattvic intention (Why I am doing this) but its manifestation (How I am doing this) could be Tamasik or Rajasic. For example, being a thief, a person stole something to fulfill the requirements of their family. Here the Manifestation (How he does it) is Tamasik but the intention (Why he does it) of thief could be Sattvic. But the predominant Guna is Tamas. Pay attention to the Intention and manifestation of work and you would be able to balance the predominant Guna. Here, the role of how we act to the result of work begins.

REACTION

How you react to the result of work is what you become and it's the one that will linger, grow, and multiply within you. Again in the same example, if the thief contemplates the action he has done (stealing), his heart must be filled with sorrow, dullness, and insult (because sattva was there in his

intention). This thought process of reacting to the action could change his mind (Though it has very low chances) and his Tamasik nature could be transformed into Sattva.

A step from Tamas to Sattva

Though everyone's thought would be to escalate the ratio of Sattva Guna and while they do so, they overlook the overall balanced state of these three combined. The approach hence should be to upkeep all the three Gunas without focusing too much on particular quality. An escalated ratio of Sattva leads you to feel spiritually egotistic, while the one with Rajas can make you greedy and workaholic, Tamas, on the other hand, makes you ignorant.

Method to follow is to work on transforming your Tamas into Rajas, and when Rajas is attained balance it to bring focus on Sattva lifestyle.

TAMAS TO RAJAS

For Example, if you are feeling Tamasik quality (depressed, anxious, irritated and lazy) in your nature, undo its predominance by engaging yourself more in physical yoga asana, meeting with positive people, traveling to new places, and eating the light food. These activities will help you to lift up your energy level (from inactivity to activity – From tamas to Rajas).

RAJAS TO SATTVA

When you feel activeness in your nature, it's the sign of predominance Rajas Guna. Now you would be more energetic in this stage, as compared to before (in tamas guna). To bring focus on Sattva from Rajas, engage yourself in activities like meditation, reading, non-profit works, and simply you can follow Yamas to balancing the excessive energy within you.

8 Limbs of Yoga

The path of self-realization is supported under eight pillar of practices, which we called eight limbs of yoga. It comprises the moral, physical, spiritual & practical aspects of yoga practice. We can't understand the higher practices in this path until we have purified ourselves through the beginning steps.

Let's start following these 8 Limbs of yoga one by one from the beginning.

1. Yama (Social Ethics)

Yama, first in 8 limbs of yoga, is simply the teachings which emphasis on our relationship to the outer world. It consists of a list of moral vows, on following which a person should self-restraint. It's the reason Yama also called the list of don't do practices. The practice of Yama prepares yogi to control his behavior towards the outer world. Yama is the moral and ethical standards in yogis life that make a firm foundation for higher practices of yoga.

THE NECESSITY OF YAMA IN YOGA

Yoga is the journey of directing awareness outward to experience the True-self inward. Before we begin to control thoughts patterns of inward (our-self) through yoga practice, we must first overcome outward thought patterns. These outward thought patterns keep our awareness into the outer world. Yama helps us to get out from these external world patterns using these five practices called 5 Yamas.

i. *Ahimsa (Non-harming)* – Ahimsa is the practice of non-harming to other living beings not only physically but mentally and emotionally also.

ii. *Satya (Truthfulness)* – Satya is the practice speaking the truth, precisely what we are experiencing something. A lie saying is something when you know it's untrue, but you consciously say it.

iii. *Asteya (Non-stealing)* – Asteya is the craving for something that is not yours, material or immaterial.

iv. *Brahmacharya (Celibacy)* – Brahma means Supreme & Charya means Habits. Brahmacharya is the attitude of yogi when their habits oriented towards the supreme. Sometimes brahmacharya also referred restraining of sexual desires.

v. *Aparigraha (Non-coveting)* – Aparigraha is the practice of not possessing something which is the result of your lust, fear & attachment.

2. Niyama (Observances)

Niyama deals with a set of concepts for self-discipline and spiritual purification of body & mind. Regular practice of Niyama makes it easier for a yogi to go through the journey of yoga and spend a healthy, purposeful life.

THE NECESSITY OF NIYAMA IN YOGA

As Yama makes yogi to control over outer world patterns, Niyama prepares yogi to control the inner thoughts & actions. Until we clear our inner thoughts & behavior, we can't make space in our inner-self for asana (3rd limb) practice.

The practice of these 5 Niyamas helps us to control over inner thoughts & our daily habits to bring awareness in.

i. *Shaucha (Cleanliness)* – Shaucha is the practice of keeping clean our body, mind & anything which is part of our lives. Cleanliness is not only about physically taking a shower or broom but also purifying our thoughts.

ii. *Santosha (Contentment)* – Santosha is the state of absolute satisfaction when a result of an activity or situation doesn't affect yogis mood. Complete satisfaction is the one which not dependent upon circumstances taking place around us.

iii. *Tapah (Austerity)* – Austerity is the ability of a yogi to continue in the path of self-realization regardless of whatever s/he experiences good or bad, hard or easy.

iv. *Svadhyay (self-study)* – Svadhyay is the consistent inquiry of self to realize the weakness and mistake of our own. This weakness provides an opportunity to grow while mistake allows us to learn.

v. *Ishvara pranidhana (Surrender to God)* – Surrendering to God is the practice of devoting the outcome of a result or every work to the supreme power.

Yama and Niyama are the foundation 1 of 8 limbs of yoga. Only when perfection on these two limbs achieved, one can get control over outward & inward senses of mind and body. Yama & Niyama are practiced in conjunction with asana and pranayama. [/alert-note]

3. Asana (Physical Posture)

Asana, the 3rd limb of yoga, is the beginning of practical aspect in the 8 limbs of yoga. It is the stillness of body & mind in any position.

Patanjali's idea about asana was that asana is a naturally occurring & is an unforced state of stillness. Although Patanjali described only meditative posture in Yoga Sutra. We practice many twisting, bending & lifting types yoga pose in modern yoga; these were not part of ancient yoga.

THE NECESSITY OF ASANA IN YOGA

Our body and mind usually wandered according to a position in which we are. Sometimes our body remains stills, then mind wandered. The practice of asana gives our body & mind a right to control over this wondering awareness. Hence we drive the awareness more in with further practices of next limbs.

4. Pranayama (Breathing techniques)

Pranayama is the practice to take control of the Prana – Life-force. It consists of different exercises of breath which allow us to move, hold or expand Prana in different regions of the body. Pranayama uses breath as a tool to play with Prana, with Prana awareness moves.

THE NECESSITY OF PRANAYAMA IN YOGA

Prana is vast energy lies within & outside the body. Pranayama gives us control over this enormous energy by inhaling the atmosphere's Prana (Fresh energy) & exhaling inner Prana out. With the help of Prana, we can direct awareness) into different parts of the body.

First four in 8 limbs of yoga are considered the external cleansing practice of mind and body. If there are some defects in performing these 4 limbs, it can be corrected by adopting the right method of preparation.

However internal cleansing practices (next four) are not correctable easy and harmful for the mind if not appropriately performed under the guidance of experienced Guru. Pranayama practice works as foundations for internal cleansing practices. [/alert-note]

5. Pratyahara (Turning Inward)

'Praty' means against & 'Ahara' means external influences taken from outside. Pratyahara is the practice to make yourself secure against external forces which drive our awareness inside out (although we intend to drive awareness in). This provides a medium for a practitioner to go deeper in internalized consciousness.

Pratyahara is the bridge between external cleansing practices and internal cleansing practices. One can't jump directly from asana to meditation, so pratyahara is that bridge that connects the outer body to the internal one.

THE NECESSITY OF PRATYAHARA IN YOGA

The practice of pratyahara withdrawals senses from external influences. These external influence inputs in the human body through five senses – taste, touch, sight, hearing, and smell. When with the practice of pratyahara, the mind gets control over five senses, sensations from each sense reach several centers in the brain according to our wishes. In this way, the mind becomes the king 3 of 5 senses (Indriya).

Pratyahara is a vital step to make yourself calm in meditative practices & to drive awareness in our body without affecting external influences.

6. Dharana (Concentration)

The method of Dharana is what most of the people experience when they sit for meditation. Dharana is a state of mind where it is less fickle than any other time Or Mind at this stage stopped bouncing uncontrollably from one point to the other point. Tratak (candle gazing), focusing on a mantra (sound) or breathing are some examples of Dharana practice.

THE NECESSITY OF DHARANA IN YOGA

If you want directly jump into the hours of meditation, it's not possible without the practice of Dharana. As slowly your practice of dharna sustained for more extended periods, you bring awareness into the more deeper level to meet up with True-self.

7. Dhyan (Meditation)

At this stage, our body & mind becomes entirely still (mind comparably less even). Meditation is the stage where our mind & body wholly absorbed into the focus & unaffected from the external influences (in deep meditation).

We can't force our-self to come into the meditation, but it's a naturally occurring state. If you're thinking 'wow, I'm meditating' during your practice, it's not meditation. Meditation is when you can able to find a gap between 2 consecutive thoughts, a gap of nothingness for an extended period.

THE NECESSITY OF MEDITATION IN YOGA

In deep meditation, we experience the existence of Soul (True-self) within us. Meditation allows us to fully aware of our present moment & feel this awareness at it's extreme.

8. Samadhi (Pure Bliss)

Samadhi is the final step in 8 limbs of yoga to the way of experiencing the Self-realization. Up to this stage, we have been established a control connection with the outer & inner world through different practices.

Samadhi is the state where the mind stops modifying any incoming or present thought & we start feeling the unmodified experience. One thing Patanjali mentioned in Yoga Sutra about Samadhi is that 'Samadhi isn't a permanent' until one wholly detached from the desires, fear or any worldly attachments.

THE NECESSITY OF SAMADHI IN YOGA

Samadhi for a more extended period is the key to self-realization experience & once a person feels this ecstatic experience s/he liberated from the death-birth cycle. This phenomenon is called moksha…& This is the yoga, merging with Supreme-Soul.

Meditation

What is Meditation?

An exquisite methodology exists within the yoga tradition that is designed to reveal the interconnectedness of every living thing. This fundamental unity is referred to as *advaita*. Meditation is the actual experience of this union.

In the Yoga Sutra, Patanjali gives instruction on how to meditate and describes what factors constitute a meditation practice. The second sutra in the first chapter states that yoga (or union) happens when the mind becomes quiet. This mental stillness is created by bringing the body, mind, and senses into balance which, in turn, relaxes the nervous system. Patanjali goes on to explain that meditation begins when we discover that our never-ending quest to possess things and our continual craving for pleasure and security can never be satisfied. When we finally realize this, our external quest turns inward, and we have shifted into the realm of meditation.

By dictionary definition, "meditation" means to reflect upon, ponder, or contemplate. It can also denote a devotional exercise of contemplation or a contemplative discourse of a religious or philosophical nature. The word meditate comes from the Latin *meditari*, which means to think about or consider. *Med* is the root of this word and means "to take appropriate measures." In our culture, to meditate can be interpreted several ways. For instance, you might meditate on or consider a course of action regarding your child's education, or a career change that would entail a move across the country. Viewing a powerful movie or play, you may be moved to meditate upon—or ponder—the moral issues plaguing today's society.

In the yogic context, meditation, or *dhyana*, is defined more specifically as a state of pure consciousness. It is the seventh stage, or limb, of the yogic path and follows *dharana*, the art of concentration. Dhyana in turn precedes *samadhi,* the state of final liberation or enlightenment, the last step in Patanjali's eight-limbed system. These three limbs—dharana (concentration), dhyana (meditation), and samadhi (ecstasy)—are inextricably linked and collectively referred to as *samyama,* the inner practice, or subtle discipline, of the yogic path.

Recall that the first four limbs—*yama* (ethics), *niyama* (self-discipline), *asana* (posture), and *Pranayama* (life-force extension)—are considered external disciplines. The fifth step, *pratyahara* represents the withdrawal of the senses. This sensual withdrawal arises out of the practice of the first four steps and links the external to the internal. When we are grounded physically and mentally, we are keenly aware of our senses, yet disengaged at the same time. Without this ability to remain detached yet observant, it is not possible to meditate. Even though you need to be able to concentrate in order to meditate, meditation is more than concentration. It ultimately evolves into an expanded state of awareness.

When we concentrate, we direct our mind toward what appears to be an object apart from ourselves. We become acquainted with this object and establish contact with it. To shift into the meditation realm,

however, we need to become involved with this object; we need to communicate with it. The result of this exchange, of course, is a deep awareness that there is no difference between us (as the subject) and that which we concentrate or meditate upon (the object). This brings us to the state of samadhi, or self-realization.

A good way to understand this is to think about the development of a relationship. First, we meet someone—that is, we make contact. Then by spending time together, listening to, and sharing with each another, we develop a relationship. In the next stage, we merge with this person in the form of a deep friendship, partnership, or marriage. The "you" and "me" become an "us."

According to the Yoga Sutra, our pain and suffering is created by the misperception that we are separate from nature. The realization that we aren't separate may be experienced spontaneously, without effort. However, most of us need guidance. Patanjali's eight-limbed system provides us with the framework we need.

Tips for improving concentration during meditation:

- Concentrate without physical tension. Many new meditators, in an effort to concentrate more deeply, tense the muscles in their body. Deep concentration, however, is possible only in a state of relaxation.
- Relax your body. To concentrate effectively, you need to start by relaxing the body. A very effective way to release stored-up bodily tension is to inhale and tense the whole body, and then release the tension as you exhale. Yogananda recommended tensing and relaxing, as well as the Regular Breathing Technique before meditation.
- Pray before you meditate. This will help you remember why you are meditating! You will also be inviting the Divine, or your Higher Self, to help you in your practice.
- Sit perfectly still. Moving your body the slightest amount sends energy, or life-force, into the muscles. Since the purpose of yoga is to draw your energy inward, any physical movement reduces your effort because it draws your energy and awareness into the body. To keep yourself from fidgeting during meditation, try thinking of your body as a rock — solid and unmoving.
- Sit longer. Your restlessness will subside the longer you sit in meditation. Even a glass of muddy water becomes clear in time, if the water is allowed to sit undisturbed.
- Keep your eyes gently raised. The point between the eyebrows, or spiritual eye, is the seat of concentration in the body, and whenever we need to concentrate deeply, we naturally focus there. It is very beneficial to keep the eyes lifted, without strain, during meditation. If you do, you will notice an improvement in your concentration.
- Consciously withdraw the energy from the body. Practice the Hong-Sau Meditation Technique; it is one of the most sacred techniques of yoga because of its ability to interiorize and focus the mind.

- To develop concentration, do one thing at a time, and do it well. Practicing concentration in daily life will help you concentrate better during meditation.
- Concentrate with interest. When you really want something, it is difficult not to think about it! Concentrate with interest on whatever you do, and you will find yourself absorbed in it.
- Pray for concentration and devotion. Sincerity means having the support of one's whole being. Pray for sincerity of effort in your meditation practice!

What is Guided Meditation?

Guided meditation is a state of relaxed concentration invoked and led by another party. It can be a yoga instructor, a religious guide, a CD or even a recording of yourself playing back to you. The guide will instruct you to relax specific muscles in the body until they are comfortable, and will then lead you through mental images and visualizations, often of healing light or the dissipation of past wrongs. Guided meditation can be as short as a few minutes or as long as several hours. Either way, the purpose is to achieve mental, emotional and physical healing and stress relief.

Guided meditation is an excellent starting point for beginners. A meditation practice involves focusing the mind on the present moment and self-awareness, both of which can be difficult for someone used to letting the mind wander. Our society is a hurried and goal-oriented one, so taking time to simply be in the moment — not actively doing something or solving some problem — can seem impossible. Meditating with a guide will provide direction. You can follow the voice and instructions of the guide, which provides a distraction from other intruding thoughts.

Not every guided mediation is created equal, but there are common characteristics in almost all sessions or recordings. Firstly, the guide will help you relax by deepening your breathing and releasing tension in specific muscle groups. There may be a grounding moment, where the guide asks you to visualize your bones and feet growing roots into the ground. You will be asked to be in the present moment by actively listening to your breath or heartbeat. The guide may have you visualize a healing light filling your body and dispelling any illness or negative energy.

The more intense guided meditations may even have you visualize sending healing light to those who have harmed you in the past. The guide will slowly have you refocus on your breathing, and have you wiggle your toes and fingers to bring you back.

How to Do Guided Meditations: The Details

- Decide the time and place
  Appropriate meditation requires an undisturbed environment. Hence, one should find a quiet and comfortable place inside their house, at a time when no one will distract them.

- Make it a daily routine
  To be able to meditate efficiently, one has to make it a habit. That is because meditation requires time, consistency, practice and concentration to allow an individual to attain the benefits of this process.
- Get rid of all thoughts
  When meditating, you have to make sure that you clear your mind and focus only on the present task to get all of the benefits. Eliminate any negative emotion that might be present in your daily life.
- Get the posture right
  You have to maintain balance and ensure that body is in a tall, upright and erect position. You have to keep your back straight so that you can take deep breaths.
- Know your aims
  You must know what you expect and want from the meditation. You must have your mindset at what your purposes and aims are during this process.
- Understand your emotions accurately
  At this point, your mind is quite focused. You tend to prevent the regular chaotic thoughts from messing up your understanding. You see unnecessary thoughts and understand what makes you sad, hurtful or worried.
- Focus on your own senses
  Ignore the surroundings and focus on your own senses. This way you learn to pay attention to the little things in life that matter. Additionally, this helps to keep your mind concentrated on the task. This task eliminates your mind from firing up a negative thought process.
- Give yourself time to relax
  You have to make sure that you give your body the time to relax. You have to just let it go. Jaw, eyes, chest, belly, neck, and forehead are areas where there is more tension. One has to focus on releasing tension from these areas.
- Use your body as a comeback
  Every time your mind wanders off into random thoughts, use your body's sensations and your breathing to focus again. This strengthens your concentration skills allowing you to focus on what is actually important.
- Keep the eyes closed
  Closing your eyes can help you remain more focused as you reduce your chances of being distracted by the surrounding. Eye closure helps you go into a meditative state at a faster rate. This is because your subconscious becomes more receptive to imagination and positivity.

What is Breathing Awareness Meditation?

Meditation usually begins with awareness of breath. This is an awareness practice, not an exercise in breathing; there is no need to adjust the breathing in any way. We simply attend to the breath, getting to know it as it is: shallow or deep, long or short, slow or fast, smooth or rough, coarse or refined,

constricted or loose. After we get distracted by sounds, thoughts or emotions, we simply return our awareness to the physical sensations of breathing.

As the mind tends to be scattered and easily distracted, we use the sensations of breathing as a kind of anchor to the present. When we rest in the breath, we are countering the strong forces of distraction. We train the mind, heart, and body to become settled and unified on one thing, at one place, at one time. If you are sitting in meditation and your mind is remembering what you did earlier in the day, then your mind and body are not in the same place at the same time. Fragmented in this way, we all too easily lose touch with a holistic sense of ourselves.

Mindfulness of breathing is a powerful ally in our lives. With steady awareness of our inhalations and exhalations, the sensations of breathing can become an equanimous constant through the ups and downs of our daily life. Resting with, even enjoying, the cycles of breathing, we are less likely to be caught up in the emotional and mental events that pass through us. Repeatedly returning to the sensations of breathing can be a highly effective training in letting go of the identification and holding which freeze the mind and heart. It also develops concentration.

How to do Breathing Awareness Meditation

- Sit comfortably, finding a stable position you can maintain for a while, either on the floor or in a chair. Close your eyes if you like, or leave them open and gaze downward toward the floor.
- Draw attention to the physical sensation of breathing, perhaps noticing the always-present rising and falling of your abdomen or chest, or perhaps the air moving in and out through your nose or mouth. With each breath, bring attention to these sensations. If you like, mentally note, “Breathing in… Breathing out.”
- Many times over, you’ll get distracted by thoughts or feelings. You may feel distracted more often than not. That’s normal. There’s no need to block or eliminate thinking or anything else. Without giving yourself a hard time or expecting anything different, when you discover that your attention has wandered, notice whatever has distracted you and then come back to the breath.
- Practice pausing before making any physical adjustments, such as moving your body or scratching an itch. With intention, shift at a moment you choose, allowing space between what you experience and what you choose to do.
- You may find your mind wandering constantly, caught up in a whirlwind—that’s normal, too. Instead of wrestling with or engaging with those thoughts as much, practice observing, noting wherever your attention has been, and then returning to the physical sensation of breathing.
- Let go of any sense of trying to make something happen. For these few minutes, create an opportunity to not plan or fix or whatever else is your habit. Exert enough effort to sustain this practice, but without causing yourself mental strain. Seek balance in this way; if you find yourself mostly daydreaming and off in fantasy, devote a little extra effort to maintaining your focus.

- Breathing in and breathing out, return your attention to the breath each time it wanders elsewhere.
- Continue to practice observing without needing to react. Just sit and pay attention as best as you are able. As hard as it is to maintain, that's all that there is. Come back over and over again, without judgement or expectation.
- When you're ready, gently open your eyes. Take a moment and notice any sounds in the environment. Notice how your body feels right now. Notice your thoughts and emotions. Pausing for a moment, decide how you'd like to continue on with your day.

What is Mantra Meditation?

A mantra is a syllable, word, or phrase that is repeated during meditation. Mantras can be spoken, chanted, whispered, or repeated in the mind. Most mantra meditation techniques have two essential components: mindfulness meditation and mantra recitation or chanting. While this age-old practice is known to have Buddhist and Hindu roots, forms of "sacred word" recitation exist within a great variety of spiritual traditions, including Judeo-Christian and Shamanic. Nowadays, mantra practice is also gaining popularity as part of non-secular mindfulness practice.

People do mantra meditation for different reasons. For some, it serves as a kind of mental protection against unwelcome distractions or emotions, as when battling sleeplessness or coping with fears associated with travel. For others, mantra meditation serves a deeper spiritual purpose. In certain Hindu and ancient Christian traditions, for example, mantra recitation is used to focus the mind-heart and connect with the divine, both within and without. In Yoga, one of the benefits of mantra recitation is that it helps keep the mind focused and receptive to the blessings of the present moment. As Buddhism is a non-thesitic tradition, mantra serves to evoke positive qualities and confidence rather than an external deity.

How to do Mantra Meditation

- Choose your mantra.
- You may repeat the mantra aloud or silently.
- Find a place to be alone and undisturbed.
- Sit down on a chair, on the floor, or on a pillow. The sitting position and on what you sit does not matter, as long as it is a comfortable position and you keep your back straight and do not tense your body and muscles.
- Take a few, deep and slow breaths.
- Clear your mind of everything and start repeating your mantra, aloud or silently, not too fast, and not too slow.

- Try to stay calm and relaxed, and avoid thinking about anything unrelated to the meditation. Focus calmly and attentively on the mantra, doing your best to ignore any thoughts, physical sensations and noises.
- Continue repeating the same mantra, over and again, for about 10 minutes. Do not think of the time or constantly look at your watch. If you meditate a little more or a little less than ten minutes that is okay.
- No matter how many times your mind wanders away, always bring it back to the mantra.
- Do not feel frustrated if your mind wanders away and you forget to repeat the mantra. Stay calm, and bring your mind back to the mantra each time it strays away.

What is Om Meditation?

Symbolism has a place in spirituality. Healing methods based on altered states of consciousness are common in spiritual or shamanic traditions but escape neuro-scientific explanations based on classical cognition. They are described here as a "perceptual-cognitive-symbolic" characteristic of ordinary states of consciousness. Another channel source of information processing, called "direct-intuitive-nonlocal," characteristic of non-ordinary states of consciousness is required to be introduced for interpretation. The first one is capable of modeling via symbolism and is more culturally bound due to its psycholinguistic features. The second one lacks symbolism; therefore, the first one has more transcultural similarity, though culture-specific transliteration may occur.

Among many symbols used, Om is one of the fundamental symbols used in the yoga tradition.

Om is the name or symbol of God (Ishwara, Brahman). Om covers the whole threefold experience of man. It is the combination of three letters, namely, A, U, and M. "A" represents the physical plane. "U" represents the mental and astral plane, the world of intelligent spirits, and all heavens. "M" represents the whole deep-sleep state, which is unknown even in our wakeful state. This concept has been well described in various Indian scriptures. In Mandukya Upanishad, it has been described that Om is the syllable of the past, the present, and the future. From the original sound, Om, all things become manifestations as its extension embodiments.

The analogy in Mundaka Upanishad describes that Om is the bow; the soul is the arrow; and Brahman is the target. The target is attained by an unerring man. One should become one with the target just like an arrow. This is to become one with the imperishable by eliminating the ideas of the body, ego, prana, hence being the self with nothing less than union with the absolute.

Svetasvatara Upanishad describes that Om is like the fire which though potentially present in firewood is not seen until two sticks are rubbed against each other. The self is like that fire; it is realized by constant awareness of the sacred syllable Om. Let the body be the stick that is rubbed and Om be the stick that is rubbed against. Then the real nature is realized which is hidden within, just as fire in a sense hidden in the wood.

It is generally recognized that experiencing a yoga practice is of great importance for all yoga techniques. The physiological and psychological effects of practicing meditation on Om have been studied. In Om meditation, the meditators first concentrate on a picture of Om and then mentally chant mantra Om effortlessly; this finally leads to a state devoid of effort and focusing, and is characterized by blissful awareness.

How to do Om Meditation

- Select a quiet place.
- Where comfortable closes and feel completely relaxed.
- Close your eyes and let your muscles and nerves relax.
- Focus on the space between your eyebrows and keep calm.
- Let your conscious mind be silent and don't think about anything, just concentrate.
- Start chanting 'Om' mentally as you think about ideas of eternity, immortality, infinity, happiness. Think abstract. You should make yourself feel that you are infinite and all pervading.
- You should remember the meaning of Om, just repeating it won't give you the desired results.
- You will soon feel pure and perfect. You would feel like you know everything and you have been set free as a bird.
- Every part of your body should be shaken up with these ideas, so that not only your mind but also your body, your senses get the feeling.
- Keep regularity in practice and go slow and steady with belief, sincerity, enthusiasm and perseverance. Best time to practice would be early morning, sunsets and evenings.

What is Trataka Meditation?

Trataka is a meditation technique which involves focusing the eyes (and, in turn, the mind) through intent but relaxed gazing. Initially, this practice is done with open eyes on an external object. It then progresses to internal practice (with eyes closed), and to gazing the void. Sometimes it's spelled tratak or tratika.

There are many ways of doing trataka, and candle gazing is just one of them (the most popular).

In all forms of trataka, you can integrate breath awareness or the repetition of a mantra if you find it helpful, although it's not commonly taught this way.

How to do Trataka Meditation

- You should first be seated in a comfortable meditative posture or a squatting position with spine erect. If you have trouble squatting on the mat, you may raise the seating by a few notches.
- A candle is placed in a Trataka Stand and the height of the stand is adjusted so that the wick of the flame is at horizontal eye level. The stand is placed at an arm's length. Trataka is to be practiced with spectacles removed, so people with spectacles may have to adjust the distance between the stand and themselves, so that they observe a clear image of the candle wick without blur.
- The focus should on the top end of the wick, as the candle burns. Keep your eyes relaxed while fixing the gaze on the wick. Try not to blink as blinking will interfere in the formation of a clear inner image.
- This gaze is kept constant for some time and then eyes closed. With the eyes closed, you should try to observe the inner image of the flame at the eye brow center.
- If you don't see it, don't be disappointed - you should start seeing it with practice. Keep the eyes closed for as long as you see the inner image. Then re-start.

What is Dynamic Meditation?

Dynamic meditation is a type of practice that involves moving the body while meditating. The practice was developed by 20th-century Indian spiritual leader Osho of the Rajneesh movement, but the name is sometimes used generically to describe any active meditation practice.

The trademarked style of meditation, officially called OSHO Dynamic Meditation, was created to move stagnant energy and break conditioned patterns in the body-mind. It involves chaotic breathing — fast with no rhythm or pattern — followed by wild movements and shouting. The full practice takes an hour to complete.

Osho, who was also known as Bhagwan Shree Rajneesh, believed that sitting to meditate was difficult in the modern world. He said that through movement, the yogi could find a silent point within, whereas by sitting quietly, the yogi becomes aware of chaos.

How to do Dynamic Meditation:

- Breathe chaotically and deeply through the nose for 10 minutes. The body can move naturally with the breathing.
- Explode with intense movement and sound for 10 minutes, holding nothing back.
- Raise the arms over your head, jump up and down, and chant the mantra “hoo-hoo-hoo” for 10 minutes.
- Freeze and remain in position for 15 minutes and just observe.
- Move to music and celebrate for 15 minutes.

What is Silence Meditation/Vipassana?

Vipassana, which means to see things as they really are, is one of India's most ancient techniques of meditation. It was rediscovered by Gotama Buddha more than 2500 years ago and was taught by him as a universal remedy for universal ills. This non-sectarian technique aims for the total eradication of mental impurities and the resultant highest happiness of full liberation.

Vipassana is a way of self-transformation through self-observation. It focuses on the deep interconnection between mind and body, which can be experienced directly by disciplined attention to the physical sensations that form the life of the body, and that continuously interconnect and condition the life of the mind. It is this observation-based, self-exploratory journey to the common root of mind and body that dissolves mental impurity, resulting in a balanced mind full of love and compassion.

The scientific laws that operate one's thoughts, feelings, judgements and sensations become clear. Through direct experience, the nature of how one grows or regresses, how one produces suffering or frees oneself from suffering is understood. Life becomes characterized by increased awareness, non-delusion, self-control and peace.

Since the time of Buddha, Vipassana has been handed down, to the present day, by an unbroken chain of teachers. Although Indian by descent, the current teacher in this chain, Mr. S.N. Goenka, was born and raised in Burma (Myanmar). While living there he had the good fortune to learn Vipassana from his teacher, Sayagyi U Ba Khin who was at the time a high Government official. After receiving training from his teacher for fourteen years, Mr. Goenka settled in India and began teaching Vipassana in 1969. Since then he has taught tens of thousands of people of all races and all religions in both the East and West. In 1982 he began to appoint assistant teachers to help him meet the growing demand for Vipassana courses.

How to do Vipassana:

- Choose a quiet place where you won't be interrupted, whether inside your home or even outdoors in nature. Sit in a comfortable position, such as on the floor or a cushion, with your legs crossed if that feels OK. Keep your head lifted straight up and your spine erect to prevent slouching.
- Image your muscles relaxing as you breathe at a normal pace.
- Choose an object to focus on, such as your breath and the physical sensations it produces, especially in your abdomen. The breath is usually the focal point of meditation because you always have access to it and it's continuous.
- While trying to keep your attention fixated on your breath, observe and explore how your mind wanders. Return your attention to the physical sensations of your breath each time you notice it has gone elsewhere.
- You can practice "naming" what's going on in your awareness to help sharpen your focus. You do this by naming the sensations you're feeling or by naming what your mind is doing when it loses focuses. For example, you can silently say to yourself "planning" or "belly falling." Any sights, sounds, smells, tastes, sensations in the body, mental images or emotions can be all named, since all of these are part of your experience.

What is Ajapa Japa?

The sadhana of ajapa japa is as old as the Upanishads. In some of the Yoga Upanishads such as Yogashiksha, you will find certain passages and stanzas which declare that the breath goes in with the sound of So and comes out with the sound of Ham. This is the ajapa gayatri which the jiva continuously repeats.

Valmiki was initiated by Narada into Ulta Nama, which is this very ajapa. Even now those who follow nirguna pantha sampradaya like Radaswami Pantha, Kabir Pantha etc. practice ajapa japa. Many of the ancient sages practiced ajapa japa. Gandhiji has also written that the name should come from within the heart, and not only from the mouth. When the name is uttered from the mouth, it is called japa; when it is uttered from the heart, it is called ajapa. Gandhiji explained it in his own way.

Ajapa japa is a complete sadhana and through it one can have direct experience of samadhi. In order to attain samadhi, in all the other yogic practices one has to have complete control over the breath, the reason being that in samadhi the breath is suspended and kumbhaka takes place spontaneously. However, in the practice of ajapa japa, due to the continuity of breath and mantra, the breathing remains normal throughout, and even in samadhi there is no change.

Apart from samadhi, there are certain practices in yoga where one becomes introvert and at that time there is automatic suspension of the breath. The difficulty is that the aspirant becomes extrovert after a short meditation if the lung capacity is not adequate. Many sadhakas have this difficulty. In the practice of ajapa japa, however, this problem is solved.

In the shastras it is said that one should practice anahata japa which never ends; it must extend into infinity. However, we do not know any mantra as such. Therefore, we need a method of repeating the mantra so that it does not end. This is achieved through the practice of ajapa japa when the mantra is adjusted with the breathing process. Thus awareness of the mantra continues throughout the practice without any break.

How to do Ajapa Japa Meditation

- Be seated with eyes closed in a meditative pose. You can choose any comfortable posture, like easy pose, thunderbolt pose, lotus pose etc. If needed you can take the support of the wall as well. Keep your head, neck and back straight, while the hands are placed on the knees, palms facing downwards. Feel completely relaxed, physically and mentally for a few minutes, before starting the practice.
- Inhale deeply and start by chanting ‘OM’ once with a deep, slow exhalation. Now, bring all your awareness to your breath. Feel the breath moving up and down, in and out, touching various parts of the body. Moving from the nose to the navel and back from the navel to the nose. The breath should be taken softly, that the sound of the breath is inaudible to the practitioner himself.

- Notice how breathing is an effortless process. Give up all the effort and just experience the complete liberation gained in the process. Softer, longer, gentler and freer, that should be the way to breathe every day.
- Keep the neck and shoulder in a line, the back straight and consciously prepare for the practice of Ajapa Japa.
- Now, start breathing with Ujjayi breath. It requires the practitioner to contract the throat muscles as they breath in and release with breathing out. An oceanic wave like sound will come from the throat, signifying the contraction of the throat muscles. This breathing intensifies the calming effect by stimulating & soothing the nervous system. The flow of the breath is experienced from the nostril to the navel and back.
- As you go deeper into the awareness of breath with Ujjayi breathing technique, chant the mantra 'So-Ham' or any mantra that resonates with you. In case of doubt. So-Ham is the best choice but if you have a guru mantra, nothing like it.
- Now as you inhale, the air descends from the nostrils to the navel chant 'So'. As you exhale, the air ascends from the navel to the nose, chant 'Ham'.
- Chant your guru mantra or personal mantra in a similar manner. Until this step we are consciously chanting the mantra. After chanting for 10 minutes or more, it is time to shift to ajapa.
- If your mantra is 'Om Namah Shivaya', you can chant the mantra as you inhale and repeat the mantra as you breath out as well. Synchronize the mantra with the breath and listen with awareness to the sound of the mantra, moving from the root chakra to the third eye and vice versa. The fusion of breath and mantra makes your concentration stable, reducing the mind's tendency to wander.
- Next, let go of the breath and focus your attention on the sound of the mantra alone. Breathe smoothly and let your awareness settle in the mantra.
- As the mantra gains momentum, the sound of the mantra will naturally begin to pulse more effortlessly. Feel the vibrations of the mantra manifesting, as it flows subtly through your mind, centering your heart. Stay here for as long as you like.
- For ending the process, slowly become aware of yourself and your surroundings. Chant Om three times and slowly open your eyes.

With regular practice, your concentration will deepen and repetition of the mantra will occur with an effortless momentum in your mind.

What is Antar Mouna?

Antar mauna is a Sanskrit term that means "inner silence." It refers to a yogic meditation technique that involves transforming and controlling thought processes through self-awareness and mindfulness. By

internalizing the senses through this form of meditation, the yogi observes the inner and underlying structure of the mind and thought processes.

Swami Satyananda Saraswati of the Bihar School of Yoga in India developed the Satyananda system of yoga and the six stages to antar mauna. Satyananda yoga incorporates aspects of Jnana, Bhakti and Karma yoga.

The first three stages of antar mauna meditation should be mastered before the yogi attempts the more advanced fourth, fifth and sixth stages. By the sixth stage, the yogi reaches a state of dharana (concentration, which is the fifth of the eight limbs of yoga) or even dhyana (deep meditation, which is the seventh limb).

THE SIX STAGES OF ANTAR MAUNA ARE:

i. Becoming aware of external sensory perceptions.
ii. Gaining awareness of spontaneous thoughts.
iii. Creating and disposing of thoughts.
iv. Refined awareness and disposal of spontaneous thoughts.
v. Creating a state in which there are no thoughts.
vi. Acute awareness of the yogi's chosen personal psychic symbol.

How to do Antar Mouna Meditation

- **Set an Intention**
  Everything begins with intention. To start, give your intention to be silent for a short period of time, it might just be 15 minutes, and allow the experience of silence to truly be the only task for that 15 minutes. When done on a regular basis this can become a beautiful daily ritual. Equally, a day may arrive when you are home alone, less likely to be interrupted, and this will allow for a deeper sense of spacious silence and peace.
- **Stop Talking**
  Start with simply not talking, although Mouna means more than just not speaking – the intention also included nonverbal communication – so, turn off the computer, iPhone, television, radio etc and power down all devices.
- **Reflect**
  As you silently move through this period of mouna, observe your thoughts and actions. Does your coffee taste better? Do you engage more deeply with your task or activity at hand? Do you notice your environment in more detail? Do you notice an urgent need to speak or chatter? Many of us at times suffer from a need to fill the silence, but this practice allows us to observe these habitual reactions and thoughts... just notice.

- **Cultivate mouna of the mind**

  The practice of mouna is ultimately about silence of the mind. When we avoid verbal and nonverbal communication we are gently led into this sense of silence but do not try 'force' mouna, just notice the thoughts, distractions, and chatter of the mind without judgment or emotion.

What is Yoga Nidra?

Yoga brings deep rest to the body and mind. It not only rejuvenates your mind but also adds vigor to the body. It's a good idea to end your daily yoga practice with Yoga Nidra or yogic sleep.

Simply described as an effortless relaxation, Yoga Nidra is an essential end to any yoga pose sequence. While yoga poses warm up the body, Yoga Nidra cools it down. This closing yoga asana involves consciously taking your attention to different parts of the body and relaxing them.

Yoga practices increase the energy levels in the body. Yoga Nidra helps conserve and consolidate this energy and relax the entire system, thereby preparing it for pranayama and meditation. It is, therefore, important to keep aside sufficient time for Yoga Nidra in your yoga regime.

How to do Yoga Nidra

- Lie down straight on your back in Corpse Pose (Shavasana). Close your eyes and relax. Take a few deep breaths in and out. Remember to take slow and relaxed breaths.
- Start by gently taking your attention to your right foot. Keep your attention there for a few seconds, while relaxing your foot. Then gently move your attention up to the right knee, right thigh and hip.
- Become aware of your whole right leg.
- Gently, repeat this process for the left leg.
- Take your attention to all parts of the body: genital area, stomach, navel region, chest.
- Take your attention to the right shoulder, right arm, palms, and fingers. Repeat this on the left shoulder, left arm, throat, face, and finally the top of the head.
- Take a deep breath in and observe the sensations in your body. Relax in this state for a few minutes.
- Slowly becoming aware of your body and surroundings, turn to your right side and keep lying down for a few more minutes. Rolling over to the right side makes the breath flow through the left nostril which helps cool the body.
- Taking your own time, you may then slowly sit up, and whenever you feel comfortable, slowly and gradually open your eyes.